



FCC RF Test Report

APPLICANT : Nokia Shanghai Bell Co., Ltd.
EQUIPMENT : FastMile 4G Receiver
BRAND NAME : NOKIA
MODEL NAME : 4G06-A
FCC ID : 2ADZR4G06A
STANDARD : 47 CFR Part 2, 24(E), 27(L), 27(M)
CLASSIFICATION : PCS Licensed Transmitter (PCB)

The product was received on May 09, 2019 and completely tested on Dec. 18, 2019. We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG950922	Rev. 01	Initial issue of report	Feb. 28, 2020

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046 §27.50(h)(2)	Conducted Output Power (Band 7)	< 2Watt	PASS	-
	§24.232(c)	Equivalent Isotropic Radiated Power (Band 2) (Band 25)	EIRP < 2Watt	PASS	-
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (Band 4) (Band 66)	EIRP < 1Watt	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §24.238(a) §27.53(h)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 25) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§27.53(m)(4)	Conducted Band Edge Measurement (Band 7)	§27.53(m)(4)		
3.8	§2.1051 §24.238(a) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 25) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	-
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7)	< 55+10log ₁₀ (P[Watts])		
3.9	§2.1055 §24.235 §27.54	Frequency Stability Temperature & Voltage	Within Authorized Band	PASS	-
4.4	§2.1053 §24.238(a) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 25) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 36.49 dB at 7488.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)	< 55+10log ₁₀ (P[Watts])		

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

Nokia Shanghai Bell Co., Ltd.

388#, Ningqiao Road, China (Shanghai) Pilot Free Trade Zone, Shanghai 201206, China

1.2 Manufacturer

Nokia Shanghai Bell Co., Ltd.

388#, Ningqiao Road, China (Shanghai) Pilot Free Trade Zone, Shanghai 201206, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	FastMile 4G Receiver
Brand Name	NOKIA
Model Name	4G06-A
FCC ID	2ADZR4G06A
EUT supports Radios application	LTE, Bluetooth
HW Version	3TG00171AB
SW Version	FMR2003 E0115
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 25 : 1850.7MHz ~ 1914.3 MHz LTE Band 66 : 1710.7 MHz ~ 1754.3 MHz
Rx Frequency	LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 25 : 1930.7MHz ~ 1994.3 MHz LTE Band 66 : 2110.7 MHz~ 2154.3 MHz
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 7 : 5MHz/ 10MHz / 15MHz / 20MHz LTE Band 25 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 66 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz
Maximum Output Power to Antenna	LTE Band 2 : 21.82 dBm LTE Band 4 : 20.41 dBm LTE Band 7 : 21.33 dBm LTE Band 25 : 22.32 dBm LTE Band 66 : 20.06 dBm
Single Antenna Gain	LTE Band 2 : 9.50 dBi LTE Band 4 : 9.50 dBi LTE Band 7 : 11.00 dBi LTE Band 25 : 9.50 dBi LTE Band 66 : 9.50 dBi
MIMO Directional Gain	LTE Band 2 : 12.51 dBi LTE Band 4 : 12.51 dBi LTE Band 7 : 14.01 dBi LTE Band 25 : 12.51 dBi LTE Band 66 : 12.51 dBi
Type of Modulation	QPSK / 16QAM / 64QAM

Remark :

1. The EUT is a fixed station.
2. The EUT supports CDD Mode;

1.5 Modification of EUT

No modifications are made to the EUT during all test items.



1.6 Maximum Conducted Power/EIRP, Frequency Tolerance, and Emission Designator

LTE Band 2		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1909.3	1M13G7D	-	1.7044	1M13W7D	-	1.4811
3	1851.5 ~ 1908.5	2M76G7D	-	1.7083	2M81W7D	-	1.6332
5	1852.5 ~ 1907.5	4M55G7D	-	1.6732	4M53W7D	-	1.6751
10	1855.0 ~ 1905.0	9M07G7D	0.0032	1.5889	9M09W7D	-	1.9898
15	1857.5 ~ 1902.5	13M6G7D	-	1.7382	13M6W7D	-	1.6089
20	1860.0 ~ 1900.0	18M5G7D	-	1.6314	18M5W7D	-	1.6277
LTE Band 2		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
1.4	1850.7 ~ 1909.3	1M13W7D		-		1.5366	
3	1851.5 ~ 1908.5	2M77W7D		-		1.6751	
5	1852.5 ~ 1907.5	4M61W7D		-		1.6751	
10	1855.0 ~ 1905.0	9M11W7D		-		1.7141	
15	1857.5 ~ 1902.5	13M5W7D		-		1.6314	
20	1860.0 ~ 1900.0	18M5W7D		-		1.6599	



LTE Band 25		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1914.3	1M13G7D	-	1.7044	1M13W7D	-	1.4811
3	1851.5 ~ 1913.5	2M76G7D	-	1.7083	2M81W7D	-	1.6332
5	1852.5 ~ 1912.5	4M55G7D	-	1.6732	4M53W7D	-	1.6751
10	1855.0 ~ 1910.0	9M07G7D	0.0032	1.5889	9M09W7D	-	1.9898
15	1857.5 ~ 1907.5	13M6G7D	-	1.7382	13M6W7D	-	1.6089
20	1860.0 ~ 1905.0	18M5G7D	-	1.6314	18M5W7D	-	1.6277

LTE Band 25		64QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1850.7 ~ 1914.3	1M13W7D	-	1.5366
3	1851.5 ~ 1913.5	2M77W7D	-	1.6751
5	1852.5 ~ 1912.5	4M61W7D	-	1.6751
10	1855.0 ~ 1910.0	9M11W7D	-	1.7141
15	1857.5 ~ 1907.5	13M5W7D	-	1.6314
20	1860.0 ~ 1905.0	18M5W7D	-	1.6599



LTE Band 4		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1710.7 ~ 1754.3	1M14G7D	-	0.8822	1M14W7D	-	0.8862
3	1711.5 ~ 1753.5	2M80G7D	-	0.9006	2M78W7D	-	0.9006
5	1712.5 ~ 1752.5	4M55G7D	-	0.9572	4M57W7D	-	0.9397
10	1715.0 ~ 1750.0	9M13G7D	0.0032	0.9795	9M09W7D	-	0.9727
15	1717.5 ~ 1747.5	13M5G7D	-	0.9476	13M5W7D	-	0.9479
20	1720.0 ~ 1745.0	18M5G7D	-	0.9639	18M5W7D	-	0.9727
LTE Band 4		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)		Maximum EIRP(W)		
1.4	1710.7 ~ 1754.3	1M12W7D	-		0.8670		
3	1711.5 ~ 1753.5	2M81W7D	-		0.8987		
5	1712.5 ~ 1752.5	4M60W7D	-		0.9354		
10	1715.0 ~ 1750.0	9M07W7D	-		0.9750		
15	1717.5 ~ 1747.5	13M6W7D	-		0.9463		
20	1720.0 ~ 1745.0	18M5W7D	-		0.9541		

LTE Band 7		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum Conducted Power(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum Conducted Power(W)
5	2502.5 ~ 2567.5	4M55G7D	-	0.1282	4M56W7D	-	0.1253
10	2505.0 ~ 2565.0	9M09G7D	0.0032	0.1327	9M09W7D	-	0.1358
15	2507.5 ~ 2562.5	13M6G7D	-	0.1352	13M6W7D	-	0.1355
20	2510.0 ~ 2560.0	18M5G7D	-	0.1355	18M5W7D	-	0.1334
LTE Band 7		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)		Maximum Conducted Power (W)		
5	2502.5 ~ 2567.5	4M54W7D	-		0.1265		
10	2505.0 ~ 2565.0	9M09W7D	-		0.1327		
15	2507.5 ~ 2562.5	13M5W7D	-		0.1343		
20	2510.0 ~ 2560.0	18M5W7D	-		0.1327		



LTE Band 66		QPSK			16QAM		
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)	Emission Designator (99%OBW)	Frequency Tolerance (ppm)	Maximum EIRP(W)
1.4	1710.7 ~ 1754.3	1M14G7D	-	0.8822	1M14W7D	-	0.8862
3	1711.5 ~ 1753.5	2M80G7D	-	0.9006	2M78W7D	-	0.9006
5	1712.5 ~ 1752.5	4M55G7D	-	0.9572	4M57W7D	-	0.9397
10	1715.0 ~ 1750.0	9M13G7D	0.0032	0.9795	9M09W7D	-	0.9727
15	1717.5 ~ 1747.5	13M5G7D	-	0.9476	13M5W7D	-	0.9479
20	1720.0 ~ 1745.0	18M5G7D	-	0.9639	18M5W7D	-	0.9727
LTE Band 66		64QAM					
BW (MHz)	Frequency Range (MHz)	Emission Designator (99%OBW)		Frequency Tolerance (ppm)		Maximum EIRP(W)	
1.4	1710.7 ~ 1754.3	1M12W7D		-		0.8670	
3	1711.5 ~ 1753.5	2M81W7D		-		0.8987	
5	1712.5 ~ 1752.5	4M60W7D		-		0.9354	
10	1715.0 ~ 1750.0	9M07W7D		-		0.9750	
15	1717.5 ~ 1747.5	13M6W7D		-		0.9463	
20	1720.0 ~ 1745.0	18M5W7D		-		0.9541	

Note:

1. LTE Band 4 overlaps the entire frequency range of LTE Band 66. Therefore, the test results provided in this report covers Band 4 as well as Band 66.
2. LTE Band 25 overlaps the entire frequency range of LTE Band 2. Therefore, the test results provided in this report covers Band 25 as well as Band 2.

1.7 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH04-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a

1.9 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR Part 2, 24(E), 27(L), 27(M)
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

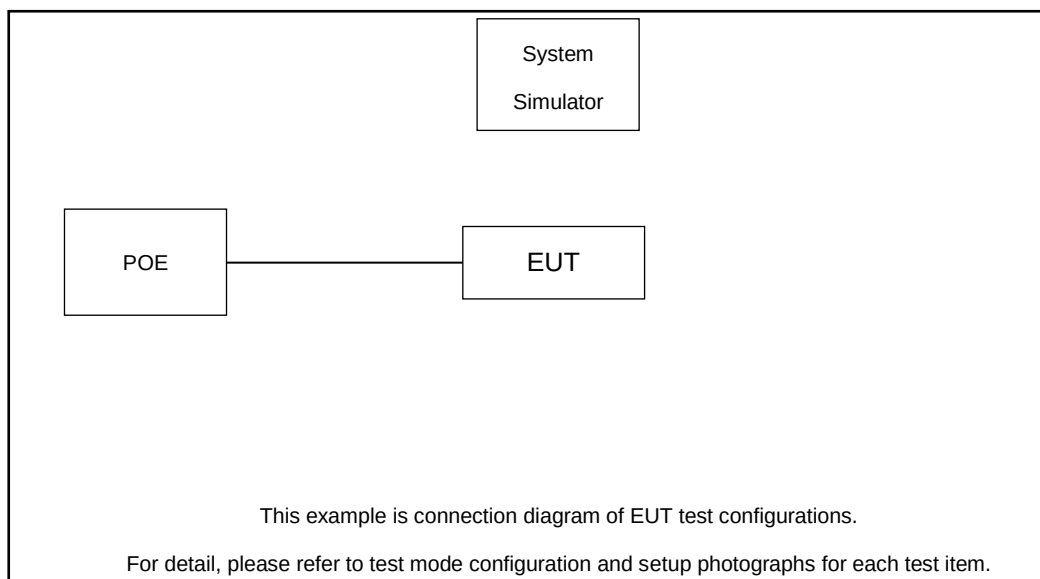
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	25	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	4						v	v	v	v	v		v	v	v	v
	7	-	-				v	v	v	v	v		v	v	v	v
	25						v	v	v	v	v		v	v	v	v
26dB and 99% Bandwidth	4	v	v	v	v	v	v	v	v	v			v	v	v	v
	7	-	-	v	v	v	v	v	v	v			v	v	v	v
	25	v	v	v	v	v	v	v	v	v			v	v	v	v
Conducted Band Edge	4	v	v	v	v	v	v	v	v	v	v		v	v		v
	7	-	-	v	v	v	v	v	v	v	v		v	v		v
	25	v	v	v	v	v	v	v	v	v	v		v	v		v
Conducted Spurious Emission	4	v	v	v	v	v	v	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v	v			v	v	v
	25	v	v	v	v	v	v	v	v	v	v			v	v	v
Frequency Stability	4				v			v					v		v	
	7	-	-		v			v					v		v	
	25				v			v					v		v	



Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
E.I.R.P	4	v	v	v	v	v	v	v	v	v	v			v	v	v
	7	-	-	v	v	v	v	v	v	v	v			v	v	v
	25	v	v	v	v	v	v	v	v	v	v			v	v	v
Radiated Spurious Emission	4	Worst Case													v	
	7	Worst Case													v	
	25	Worst Case													v	
Note	1. The mark “v ” means that this configuration is chosen for testing 2. The mark “-“ means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. LTE Band 4 overlaps the entire frequency range of LTE Band 66. Therefore, the test results provided in this report covers Band 4 as well as Band 66. 5. LTE Band 25 overlaps the entire frequency range of LTE Band 2. Therefore, the test results provided in this report covers Band 25 as well as Band 2.															

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTR	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
3.	POE injector	NOKIA	G0545-530-060-PSE 1000	N/A	N/A	Unshielded, 0.6 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5.5 dB.

Example :

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)}. \\ &= 5.5 \text{ (dB)} \end{aligned}$$

2.5 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3



LTE Band 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5

LTE Band 25 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	26140	26340	26590
	Frequency	1860	1880	1905
15	Channel	26115	26340	26615
	Frequency	1857.5	1880	1907.5
10	Channel	26090	26340	26640
	Frequency	1855	1880	1910
5	Channel	26065	26340	26665
	Frequency	1852.5	1880	1912.5
3	Channel	26055	26340	26675
	Frequency	1851.5	1880	1913.5
1.4	Channel	26047	26340	26683
	Frequency	1850.7	1880	1914.3



LTE Band 66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	132072	132197	132322
	Frequency	1720	1732.5	1745
15	Channel	132047	132197	132347
	Frequency	1717.5	1732.5	1747.5
10	Channel	132022	132197	132372
	Frequency	1715	1732.5	1750
5	Channel	131997	132197	132397
	Frequency	1712.5	1732.5	1752.5
3	Channel	131987	132197	132407
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	131979	132197	132417
	Frequency	1710.7	1732.5	1754.5

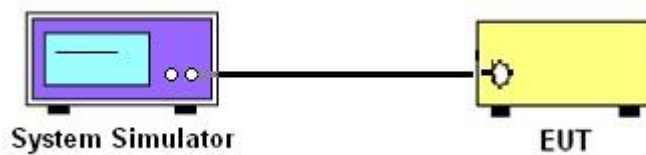
3 Conducted Test Items

3.1 Measuring Instruments

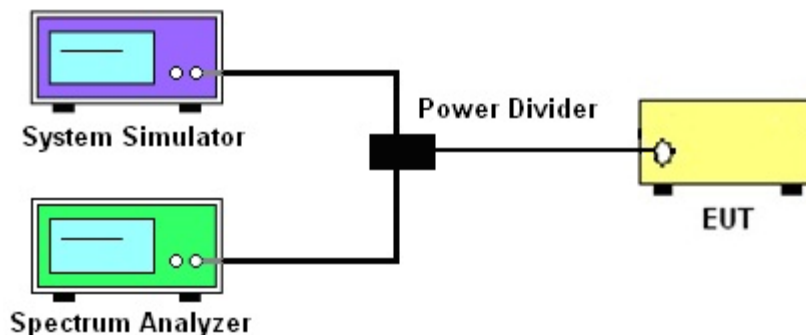
See list of measuring instruments of this test report.

3.2 Test Setup

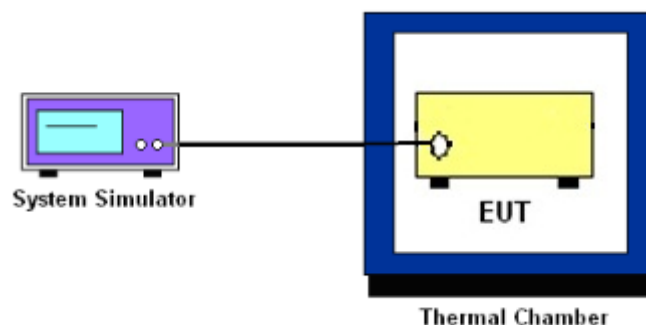
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and EIRP

3.4.1 Description of the Conducted Output Power Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The EIRP of mobile transmitters must not exceed 2 Watts for LTE Band 2 and Band 25.

The EIRP of mobile transmitters must not exceed 1 Watts for LTE Band 4 and Band 66.

For Band 7: Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

For all fixed digital user stations, the attenuation factor shall be not less than $43 + 10 \log (P)$ dB at the channel edge.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used and the measured power was integrated over the full required measurement bandwidth of 1 MHz.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.

Example:

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)} = -13\text{dBm}.$$

9. For LTE Band 7 , the other 40 dB, and 55 dB have additionally applied same calculation above.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $55 + 10 \log (P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
 $= -13$ dBm.
11. For Band 7
The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [55 + 10\log(P)]$ (dB)
 $= [30 + 10\log(P)]$ (dBm) - $[55 + 10\log(P)]$ (dB)
 $= -25$ dBm.

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

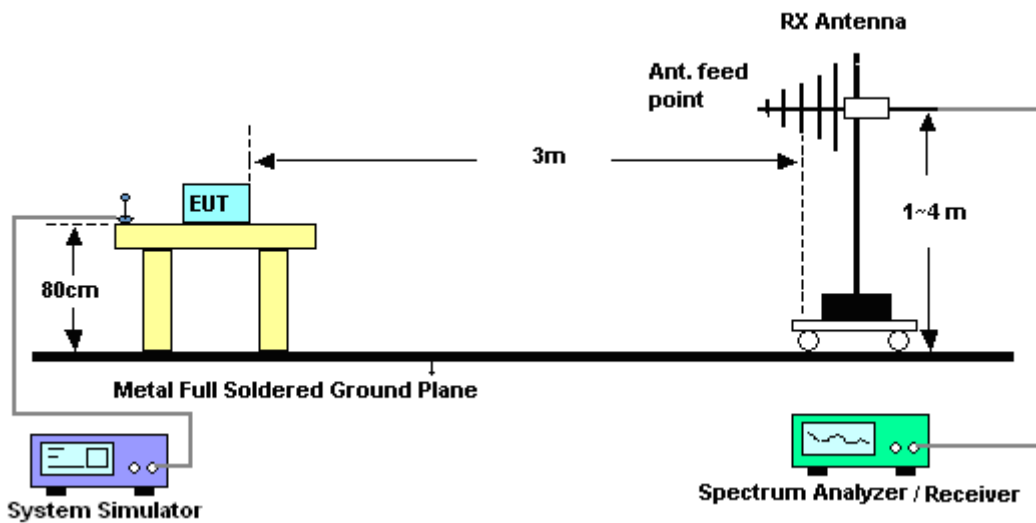
4 Radiated Test Items

4.1 Measuring Instruments

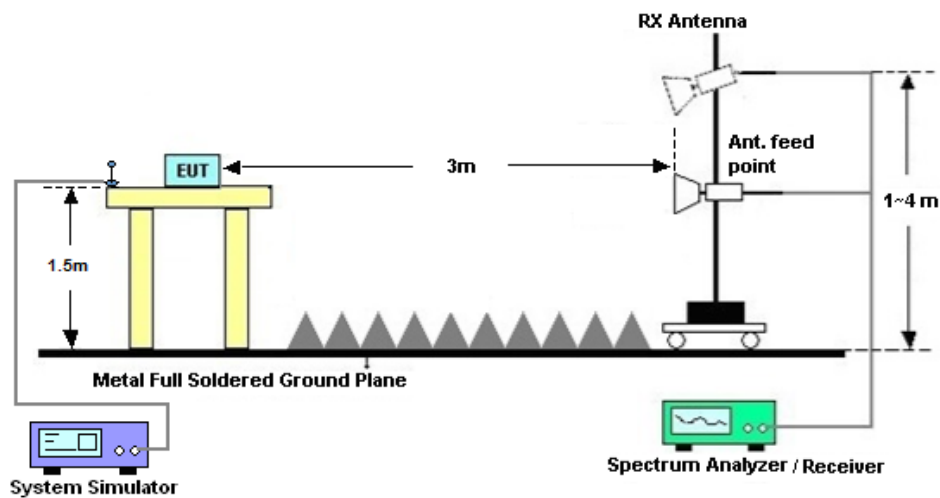
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $55 + 10 \log (P)$ dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10\log(P)] \text{ (dB)}$
 $= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$
 $= -13\text{dBm}.$

13. For Band 7:

The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Aug. 07, 2019	Nov. 20, 2019~ Dec. 18, 2019	Aug. 06, 2020	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 04, 2019	Nov. 20, 2019~ Dec. 18, 2019	Jul. 03, 2020	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 16, 2019	Aug. 29, 2019	Apr. 15, 2020	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 28, 2018	Aug. 29, 2019	Dec. 27, 2019	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1648	1GHz~18GHz	Jan. 27, 2019	Aug. 29, 2019	Jan. 26, 2020	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 05, 2019	Aug. 29, 2019	Jan. 04, 2020	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Aug. 06, 2019	Aug. 29, 2019	Aug. 05, 2020	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Apr. 15, 2019	Aug. 29, 2019	Apr. 14, 2020	Radiation (03CH04-KS)
Amplifier	MITEQ	TTA1840-35 -HG	2014749	18~40GHz	Jan. 14, 2019	Aug. 29, 2019	Jan. 13, 2020	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 29, 2019	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Aug. 29, 2019	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Aug. 29, 2019	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required



6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.3 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8 dB
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Appendix A. Test Results of Conducted Test

A.1 SISO Antenna 1

A.1.1 Conducted Output Power(Average power)

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	19.71	21.59	21.39
20	1	99		21.68	21.43	20.46
20	18	0		19.43	21.51	21.31
20	18	82		21.43	21.28	20.18
20	100	0		19.87	21.42	21.07
20	1	0	16-QAM	19.56	21.24	21.28
20	1	99		21.64	21.31	20.40
20	18	0		19.53	21.28	21.34
20	18	82		21.34	21.13	20.32
20	100	0		20.88	21.29	20.86
20	1	0	64-QAM	19.56	21.49	21.34
20	1	99		21.46	21.43	20.44
20	18	0		19.68	21.31	21.26
20	18	82		21.46	21.23	20.61
20	100	0		20.87	21.14	20.58
15	1	0	QPSK	19.69	21.75	21.22
15	1	74		21.66	21.46	20.40
15	16	0		19.41	21.06	20.52
15	16	59		21.38	21.27	20.31
15	75	0		19.64	21.67	20.96
15	1	0	16-QAM	19.68	21.63	21.36
15	1	74		21.64	21.43	20.42
15	16	0		19.16	21.03	20.66
15	16	59		21.31	21.23	20.27
15	75	0		20.61	21.13	20.86
15	1	0	64-QAM	19.44	21.59	21.27
15	1	74		21.56	21.27	20.42
15	16	0		19.26	21.03	20.63
15	16	59		21.31	21.14	20.24
15	75	0		20.43	21.30	20.84



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	19.53	21.44	21.11
10	1	49		21.27	21.42	20.08
10	12	0		19.46	21.49	21.07
10	12	38		20.81	21.16	20.57
10	50	0		20.34	21.47	20.12
10	1	0	16-QAM	19.66	21.57	21.12
10	1	49		21.09	21.37	20.14
10	12	0		19.46	21.23	21.23
10	12	38		21.00	21.34	20.15
10	50	0		20.18	21.34	20.49
10	1	0	64-QAM	19.48	21.36	21.11
10	1	49		21.21	21.41	20.23
10	12	0		19.40	21.33	21.12
10	12	38		20.83	21.24	20.24
10	50	0		20.36	21.19	20.49
5	1	0	QPSK	18.26	21.14	20.39
5	1	24		20.31	20.88	18.86
5	8	0		18.76	21.67	20.81
5	8	17		20.01	21.07	20.03
5	25	0		19.86	21.32	20.41
5	1	0	16-QAM	17.98	21.12	20.62
5	1	24		20.31	20.87	18.96
5	8	0		19.68	21.63	20.77
5	8	17		20.11	21.06	20.11
5	25	0		19.86	21.11	20.31
5	1	0	64-QAM	18.19	21.25	20.45
5	1	24		20.16	20.78	18.76
5	8	0		19.68	21.56	20.81
5	8	17		20.01	21.41	19.92
5	25	0		19.62	21.03	20.16



LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	17.83	21.74	20.41
3	1	14		18.67	21.21	18.07
3	15	0		19.85	21.26	20.09
3	1	0	16-QAM	17.63	21.57	20.33
3	1	14		19.73	21.43	18.20
3	15	0		19.68	21.24	20.37
3	1	0	64-QAM	17.57	21.59	20.35
3	1	14		19.92	21.35	18.16
3	15	0		19.68	21.27	20.12
1.4	1	0	QPSK	20.14	21.76	21.47
1.4	1	5		19.86	21.82	21.22
1.4	6	0		20.12	21.79	21.49
1.4	1	0	16-QAM	20.21	21.76	21.04
1.4	1	5		21.13	21.49	19.89
1.4	6	0		20.08	21.19	21.17
1.4	1	0	64-QAM	20.24	21.68	19.86
1.4	1	5		20.13	21.76	20.79
1.4	6	0		21.09	21.81	20.89



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	20.06	21.92	21.69
20	1	99		21.97	21.72	20.76
20	18	0		19.93	21.77	21.62
20	18	82		21.83	21.45	20.68
20	100	0		21.29	21.73	21.22
20	1	0	16-QAM	19.96	21.83	21.58
20	1	99		21.92	21.66	20.70
20	18	0		19.86	21.64	21.54
20	18	82		21.73	21.32	20.62
20	100	0		21.03	21.49	21.02
20	1	0	64-QAM	19.96	21.79	21.57
20	1	99		21.79	21.66	20.66
20	18	0		19.88	21.64	21.57
20	18	82		21.72	21.42	20.64
20	100	0		21.01	21.48	21.04
15	1	0	QPSK	20.02	22.12	21.62
15	1	74		21.91	21.83	20.80
15	16	0		19.56	21.39	20.94
15	16	59		21.67	21.68	20.61
15	75	0		21.12	21.97	21.25
15	1	0	16-QAM	19.94	21.84	21.56
15	1	74		21.74	21.64	20.72
15	16	0		19.45	21.24	20.88
15	16	59		21.54	21.62	20.57
15	75	0		20.79	21.56	21.07
15	1	0	64-QAM	19.88	21.78	21.54
15	1	74		21.72	21.62	20.72
15	16	0		19.48	21.24	20.92
15	16	59		21.56	21.58	20.55
15	75	0		20.79	21.50	21.08



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	19.91	21.88	21.37
10	1	49		21.52	21.82	20.52
10	12	0		19.78	21.78	21.33
10	12	38		21.31	21.54	20.57
10	50	0		20.78	21.90	21.09
10	1	0	16-QAM	19.89	21.75	21.34
10	1	49		21.39	21.72	20.41
10	12	0		19.76	21.66	21.32
10	12	38		21.21	21.54	20.45
10	50	0		20.58	21.64	20.94
10	1	0	64-QAM	19.85	21.77	21.32
10	1	49		21.41	21.70	20.45
10	12	0		19.70	21.66	21.27
10	12	38		21.17	21.48	20.42
10	50	0		20.56	21.61	20.92
5	1	0	QPSK	18.48	21.55	20.89
5	1	24		20.63	21.16	19.17
5	8	0		20.02	21.82	21.05
5	8	17		20.30	21.37	20.34
5	25	0		20.18	21.62	20.72
5	1	0	16-QAM	18.41	21.42	20.82
5	1	24		20.52	21.07	19.16
5	8	0		19.97	21.72	20.99
5	8	17		20.22	21.32	20.21
5	25	0		20.08	21.41	20.51
5	1	0	64-QAM	18.39	21.42	20.75
5	1	24		20.49	21.11	19.08
5	8	0		19.94	21.71	21.03
5	8	17		20.19	21.33	20.27
5	25	0		19.91	21.32	20.49



LTE Band 25 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	18.02	22.02	20.71
3	1	14		20.14	21.68	18.47
3	15	0		20.12	21.94	20.69
3	1	0	16-QAM	17.96	21.92	20.66
3	1	14		20.13	21.61	18.40
3	15	0		20.04	21.64	20.59
3	1	0	64-QAM	17.75	21.96	20.64
3	1	14		20.02	21.65	18.47
3	15	0		19.86	21.59	20.57
1.4	1	0	QPSK	20.54	22.11	21.67
1.4	1	5		20.38	22.07	21.52
1.4	6	0		20.62	22.32	21.79
1.4	1	0	16-QAM	20.42	22.01	21.34
1.4	1	5		20.26	21.92	21.21
1.4	6	0		20.28	21.96	21.37
1.4	1	0	64-QAM	20.42	21.99	21.27
1.4	1	5		20.27	21.92	21.14
1.4	6	0		20.31	21.98	21.25



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	18.54	20.27	20.02
20	1	99		19.90	20.26	20.06
20	18	0		19.68	19.75	19.75
20	18	82		19.74	19.79	19.98
20	100	0		19.66	19.66	20.13
20	1	0	16-QAM	18.27	20.08	19.82
20	1	99		19.74	20.02	19.91
20	18	0		18.62	19.66	19.78
20	18	82		19.73	19.75	19.97
20	100	0		19.59	19.59	20.12
20	1	0	64-QAM	18.38	19.98	20.13
20	1	99		19.79	20.11	20.22
20	18	0		18.62	19.65	20.18
20	18	82		19.72	19.73	19.83
20	100	0		19.55	19.56	20.07
15	1	0	QPSK	18.48	19.94	20.04
15	1	74		20.08	19.57	20.00
15	16	0		18.02	19.12	19.65
15	16	59		19.99	19.66	20.07
15	75	0		19.66	19.58	20.12
15	1	0	16-QAM	18.28	19.68	19.87
15	1	74		20.01	19.59	19.89
15	16	0		18.02	19.14	19.64
15	16	59		19.98	19.71	20.09
15	75	0		19.63	19.61	20.12
15	1	0	64-QAM	19.95	19.71	20.03
15	1	74		20.01	19.68	19.98
15	16	0		17.97	19.09	19.62
15	16	59		19.95	19.69	20.04
15	75	0		19.60	19.58	20.08



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	18.59	20.05	20.34
10	1	49		20.41	19.94	20.08
10	12	0		18.57	19.76	20.41
10	12	38		20.17	19.65	20.06
10	50	0		19.61	19.71	20.33
10	1	0	16-QAM	18.18	19.75	20.24
10	1	49		20.08	19.69	20.03
10	12	0		18.51	19.62	20.36
10	12	38		20.14	19.63	20.02
10	50	0		19.60	19.70	20.38
10	1	0	64-QAM	18.37	19.86	20.29
10	1	49		20.25	19.85	20.11
10	12	0		18.48	19.64	20.39
10	12	38		20.09	19.55	20.04
10	50	0		19.55	19.65	20.30
5	1	0	QPSK	17.18	19.30	19.94
5	1	24		19.54	19.18	19.61
5	8	0		18.63	19.35	20.31
5	8	17		19.32	19.12	19.76
5	25	0		18.75	19.09	19.96
5	1	0	16-QAM	17.25	19.03	19.73
5	1	24		19.23	18.95	19.53
5	8	0		18.47	19.49	20.23
5	8	17		19.18	19.32	19.71
5	25	0		18.64	19.24	19.94
5	1	0	64-QAM	16.88	19.05	19.73
5	1	24		19.28	18.98	19.41
5	8	0		18.41	19.47	20.21
5	8	17		19.09	19.31	19.67
5	25	0		18.56	19.16	19.89



LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	16.01	19.39	19.92
3	1	14		18.29	19.41	19.61
3	15	0		18.11	19.33	19.78
3	1	0	16-QAM	15.81	19.23	19.81
3	1	14		18.39	19.26	19.54
3	15	0		18.08	19.33	19.77
3	1	0	64-QAM	15.97	19.35	19.85
3	1	14		18.34	19.28	19.64
3	15	0		18.12	19.24	19.76
1.4	1	0	QPSK	18.39	19.58	19.94
1.4	1	5		18.21	19.26	19.85
1.4	6	0		18.07	19.43	19.82
1.4	1	0	16-QAM	18.36	19.38	19.86
1.4	1	5		18.14	19.32	19.77
1.4	6	0		18.09	19.48	19.78
1.4	1	0	64-QAM	18.36	19.40	19.76
1.4	1	5		18.21	19.35	19.75
1.4	6	0		18.09	19.47	19.78



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	21.05	20.97	21.32
20	1	99		20.24	21.28	20.68
20	18	0		20.88	20.96	21.25
20	18	82		20.19	21.12	20.57
20	100	0		20.72	21.11	21.12
20	1	0	16-QAM	20.88	20.85	21.25
20	1	99		20.12	21.19	20.64
20	18	0		20.75	20.86	21.23
20	18	82		20.17	21.02	20.43
20	100	0		20.65	21.02	21.17
20	1	0	64-QAM	20.89	20.88	21.23
20	1	99		20.16	21.15	20.58
20	18	0		20.77	20.85	21.19
20	18	82		20.17	21.02	20.47
20	100	0		20.63	21.00	21.16
15	1	0	QPSK	21.02	21.07	21.31
15	1	74		20.66	21.27	20.52
15	16	0		20.43	20.78	20.71
15	16	59		20.68	21.16	20.55
15	75	0		20.79	21.04	21.01
15	1	0	16-QAM	20.93	20.94	21.32
15	1	74		20.64	21.18	20.52
15	16	0		20.36	20.69	20.77
15	16	59		20.63	21.09	20.51
15	75	0		20.74	20.92	21.07
15	1	0	64-QAM	20.90	21.02	21.28
15	1	74		20.68	21.18	20.53
15	16	0		20.39	20.68	20.74
15	16	59		20.69	21.06	20.46
15	75	0		20.73	20.94	21.07



LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	20.89	21.21	21.23
10	1	49		20.92	21.23	20.49
10	12	0		20.82	21.22	21.12
10	12	38		20.81	21.02	20.48
10	50	0		20.98	21.03	20.94
10	1	0	16-QAM	20.76	21.14	21.33
10	1	49		20.85	21.10	20.42
10	12	0		20.74	21.14	21.17
10	12	38		20.76	20.89	20.43
10	50	0		20.90	20.95	20.96
10	1	0	64-QAM	20.81	21.17	21.23
10	1	49		20.84	21.13	20.41
10	12	0		20.76	21.14	21.13
10	12	38		20.78	20.93	20.44
10	50	0		20.88	20.96	20.97
5	1	0	QPSK	20.49	20.77	20.54
5	1	24		20.89	20.63	20.12
5	8	0		20.75	21.08	20.84
5	8	17		20.82	20.77	20.26
5	25	0		20.61	20.76	20.42
5	1	0	16-QAM	20.38	20.74	20.48
5	1	24		20.85	20.59	20.04
5	8	0		20.67	20.98	20.78
5	8	17		20.75	20.70	20.23
5	25	0		20.55	20.72	20.39
5	1	0	64-QAM	20.42	20.75	20.45
5	1	24		20.85	20.52	20.05
5	8	0		20.71	21.02	20.75
5	8	17		20.73	20.65	20.21
5	25	0		20.54	20.68	20.37



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
20	1	0	QPSK	18.02	20.00	19.65
20	1	99		19.65	20.02	20.06
20	18	0		19.25	19.02	19.25
20	18	82		19.47	19.65	19.65
20	100	0		19.26	19.02	19.69
20	1	0	16-QAM	18.01	19.26	19.29
20	1	99		19.66	19.26	19.19
20	18	0		18.26	19.26	19.32
20	18	82		19.37	19.30	19.65
20	100	0		19.23	19.01	19.02
20	1	0	64-QAM	18.02	19.65	19.26
20	1	99		19.36	19.65	19.65
20	18	0		18.26	19.32	20.01
20	18	82		19.27	19.37	19.38
20	100	0		19.23	19.32	19.65
15	1	0	QPSK	18.02	19.49	19.99
15	1	74		19.65	19.02	19.15
15	16	0		17.65	19.00	19.02
15	16	59		18.88	19.23	19.65
15	75	0		18.36	19.02	19.65
15	1	0	16-QAM	17.98	19.32	19.32
15	1	74		19.39	19.03	19.26
15	16	0		17.65	18.65	19.34
15	16	59		19.36	19.19	19.65
15	75	0		19.36	19.34	19.65
15	1	0	64-QAM	19.59	19.23	19.65
15	1	74		19.65	19.24	19.65
15	16	0		17.26	19.01	19.26
15	16	59		19.59	19.26	19.65
15	75	0		19.23	19.32	19.56



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK	18.23	19.65	20.01
10	1	49		19.56	19.49	19.49
10	12	0		18.02	19.02	19.65
10	12	38		19.65	19.56	19.69
10	50	0		19.16	19.17	19.69
10	1	0	16-QAM	17.65	19.54	19.98
10	1	49		19.65	19.32	19.64
10	12	0		17.99	19.26	20.03
10	12	38		19.69	19.36	19.65
10	50	0		19.26	19.12	19.98
10	1	0	64-QAM	18.02	19.32	19.65
10	1	49		20.02	19.22	19.65
10	12	0		18.26	19.23	20.03
10	12	38		19.65	19.02	19.65
10	50	0		19.23	19.56	20.01
5	1	0	QPSK	16.26	19.03	19.49
5	1	24		18.98	19.04	19.16
5	8	0		18.36	19.02	20.00
5	8	17		18.65	19.01	19.64
5	25	0		18.02	19.06	19.02
5	1	0	16-QAM	16.65	18.65	19.34
5	1	24		18.65	18.02	19.02
5	8	0		18.10	19.03	19.65
5	8	17		18.56	19.12	19.17
5	25	0		18.26	19.01	19.49
5	1	0	64-QAM	16.22	18.65	19.37
5	1	24		19.02	18.56	19.14
5	8	0		18.14	19.14	20.01
5	8	17		18.65	19.01	19.26
5	25	0		18.02	18.62	19.32



LTE Band 66 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
3	1	0	QPSK	15.23	19.02	19.26
3	1	14		17.65	19.14	19.20
3	15	0		17.26	19.02	19.23
3	1	0	16-QAM	15.18	19.02	19.65
3	1	14		18.02	19.03	19.02
3	15	0		17.65	19.10	19.21
3	1	0	64-QAM	15.65	19.02	19.58
3	1	14		18.02	19.01	19.16
3	15	0		17.65	18.65	19.56
1.4	1	0	QPSK	17.36	19.26	19.49
1.4	1	5		17.65	19.01	19.56
1.4	6	0		17.26	19.03	19.25
1.4	1	0	16-QAM	18.02	19.02	19.65
1.4	1	5		18.01	19.03	19.45
1.4	6	0		17.65	19.15	19.02
1.4	1	0	64-QAM	18.03	19.01	19.26
1.4	1	5		18.02	19.03	19.26
1.4	6	0		17.65	19.02	19.23



A.1.2 EIRP

LTE Band 4 (GT - LC = 9.5 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	18.39	19.58	19.94	16.01	19.39	19.92	18.63	19.35	20.31
Conducted Power (Watts)	0.0690	0.0908	0.0986	0.0399	0.0869	0.0982	0.0729	0.0861	0.1074
EIRP(dBm)	27.89	29.08	29.44	25.51	28.89	29.42	28.13	28.85	29.81
EIRP(Watts)	0.6152	0.8091	0.8790	0.3556	0.7745	0.8750	0.6501	0.7674	0.9572

LTE Band 4 (GT - LC = 9.5 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	18.57	19.76	20.41	19.66	19.58	20.12	18.54	20.27	20.02
Conducted Power (Watts)	0.0719	0.0946	0.1099	0.0925	0.0908	0.1028	0.0714	0.1064	0.1005
EIRP(dBm)	28.07	29.26	29.91	29.16	29.08	29.62	28.04	29.77	29.52
EIRP(Watts)	0.6412	0.8433	0.9795	0.8241	0.8091	0.9162	0.6368	0.9484	0.8954



LTE Band 4 (GT - LC = 9.5 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	18.36	19.38	19.86	15.81	19.23	19.81	18.47	19.49	20.23
Conducted Power (Watts)	0.0685	0.0867	0.0968	0.0381	0.0838	0.0957	0.0703	0.0889	0.1054
EIRP(dBm)	27.86	28.88	29.36	25.31	28.73	29.31	27.97	28.99	29.73
EIRP(Watts)	0.6109	0.7727	0.8630	0.3396	0.7464	0.8531	0.6266	0.7925	0.9397

LTE Band 4 (GT - LC = 9.5 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	19.60	19.70	20.38	19.63	19.61	20.12	19.59	19.59	20.12
Conducted Power (Watts)	0.0912	0.0933	0.1091	0.0918	0.0914	0.1028	0.0910	0.0910	0.1028
EIRP(dBm)	29.10	29.20	29.88	29.13	29.11	29.62	29.09	29.09	29.62
EIRP(Watts)	0.8128	0.8318	0.9727	0.8185	0.8147	0.9162	0.8110	0.8110	0.9162



LTE Band 4 (GT - LC = 9.5 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	19957	20175	20393	19965	20175	20385	19975	20175	20375
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1710.7	1732.5	1754.3	1711.5	1732.5	1753.5	1712.5	1732.5	1752.5
(MHz)									
Conducted Power (dBm)	18.09	19.47	19.78	15.97	19.35	19.85	18.41	19.47	20.21
Conducted Power (Watts)	0.0644	0.0885	0.0951	0.0395	0.0861	0.0966	0.0693	0.0885	0.1050
EIRP(dBm)	27.59	28.97	29.28	25.47	28.85	29.35	27.91	28.97	29.71
EIRP(Watts)	0.5741	0.7889	0.8472	0.3524	0.7674	0.8610	0.6180	0.7889	0.9354

LTE Band 4 (GT - LC = 9.5 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	20000	20175	20350	20025	20175	20325	20050	20175	20300
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1715	1732.5	1750	1717.5	1732.5	1747.5	1720	1732.5	1745
(MHz)									
Conducted Power (dBm)	18.48	19.64	20.39	19.60	19.58	20.08	19.79	20.11	20.22
Conducted Power (Watts)	0.0705	0.0920	0.1094	0.0912	0.0908	0.1019	0.0953	0.1026	0.1052
EIRP(dBm)	27.98	29.14	29.89	29.10	29.08	29.58	29.29	29.61	29.72
EIRP(Watts)	0.6281	0.8204	0.9750	0.8128	0.8091	0.9078	0.8492	0.9141	0.9376



LTE Band 25 (GT - LC = 9.5 dB) QPSK									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	20.62	22.32	21.79	18.02	22.02	20.71	20.02	21.82	21.05
Conducted Power (Watts)	0.1153	0.1706	0.1510	0.0634	0.1592	0.1178	0.1005	0.1521	0.1274
EIRP(dBm)	30.12	31.82	31.29	27.52	31.52	30.21	29.52	31.32	30.55
EIRP(Watts)	1.0280	1.5205	1.3459	0.5649	1.4191	1.0495	0.8954	1.3552	1.1350

LTE Band 25 (GT - LC = 9.5 dB) QPSK									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	20.78	21.90	21.09	20.02	22.12	21.62	21.97	21.72	20.76
Conducted Power (Watts)	0.1197	0.1549	0.1285	0.1005	0.1629	0.1452	0.1574	0.1486	0.1191
EIRP(dBm)	30.28	31.40	30.59	29.52	31.62	31.12	31.47	31.22	30.26
EIRP(Watts)	1.0666	1.3804	1.1455	0.8954	1.4521	1.2942	1.4028	1.3243	1.0617



LTE Band 25 (GT - LC = 9.5 dB) 16QAM									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	20.42	22.01	21.34	17.96	21.92	20.66	19.97	21.72	20.99
Conducted Power (Watts)	0.1102	0.1589	0.1361	0.0625	0.1556	0.1164	0.0993	0.1486	0.1256
EIRP(dBm)	29.92	31.51	30.84	27.46	31.42	30.16	29.47	31.22	30.49
EIRP(Watts)	0.9817	1.4158	1.2134	0.5572	1.3868	1.0375	0.8851	1.3243	1.1194

LTE Band 25 (GT - LC = 9.5 dB) 16QAM									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	19.89	21.75	21.34	19.94	21.84	21.56	21.92	21.66	20.70
Conducted Power (Watts)	0.0975	0.1496	0.1361	0.0986	0.1528	0.1432	0.1556	0.1466	0.1175
EIRP(dBm)	29.39	31.25	30.84	29.44	31.34	31.06	31.42	31.16	30.20
EIRP(Watts)	0.8690	1.3335	1.2134	0.8790	1.3614	1.2764	1.3868	1.3062	1.0471



LTE Band 25 (GT - LC = 9.5 dB) 64QAM									
Bandwidth	1.4M			3M			5M		
Channel	26407	26340	26683	26055	26340	26675	26065	26340	26665
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1850.7	1880	1914.3	1851.5	1880	1913.5	1852.5	1880	1912.5
(MHz)									
Conducted Power (dBm)	20.42	21.99	21.27	17.75	21.96	20.64	19.94	21.71	21.03
Conducted Power (Watts)	0.1102	0.1581	0.1340	0.0596	0.1570	0.1159	0.0986	0.1483	0.1268
EIRP(dBm)	29.92	31.49	30.77	27.25	31.46	30.14	29.44	31.21	30.53
EIRP(Watts)	0.9817	1.4093	1.1940	0.5309	1.3996	1.0328	0.8790	1.3213	1.1298

LTE Band 25 (GT - LC = 9.5 dB) 64QAM									
Bandwidth	10M			15M			20M		
Channel	26090	26340	26640	26115	26340	26615	26140	26340	26590
	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)	(Low)	(Mid)	(High)
Frequency	1855	1880	1910	1857.5	1880	1907.5	1860	1880	1905
(MHz)									
Conducted Power (dBm)	19.85	21.77	21.32	19.88	21.78	21.54	21.79	21.66	20.66
Conducted Power (Watts)	0.0966	0.1503	0.1355	0.0973	0.1507	0.1426	0.1510	0.1466	0.1164
EIRP(dBm)	29.35	31.27	30.82	29.38	31.28	31.04	31.29	31.16	30.16
EIRP(Watts)	0.8610	1.3397	1.2078	0.8670	1.3428	1.2706	1.3459	1.3062	1.0375

A.1.3 Peak-to-Average Ratio

Mode	LTE Band 4 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	5.94	6.09	5.97	6.29	PASS
Middle CH	6.12	5.80	6.14	6.67	
Highest CH	6.38	5.22	6.14	6.41	
Mod.	64QAM		-		Limit: 13dB
RB Size	1RB	Full RB	-	-	Result
Lowest CH	6.81	6.32	-	-	PASS
Middle CH	6.93	6.67	-	-	
Highest CH	6.81	6.41	-	-	

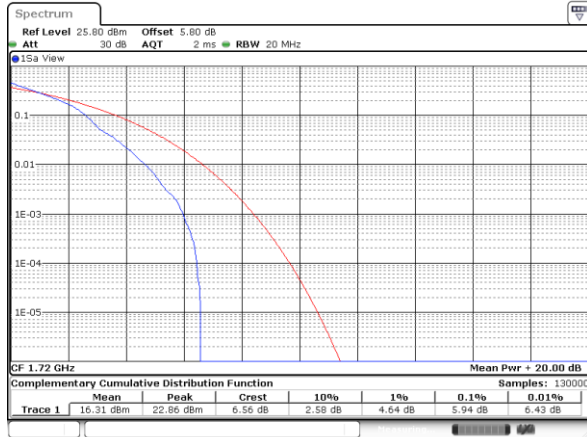
Mode	LTE Band 7 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.17	4.64	4.90	5.36	PASS
Middle CH	4.41	4.43	5.16	5.07	
Highest CH	4.75	5.16	5.33	5.88	
Mode	LTE Band 7 / 20MHz				
Mod.	64QAM		-		Limit: 13dB
RB Size	1RB	Full RB	-	-	Result
Lowest CH	4.75	5.42	-	-	PASS
Middle CH	5.36	5.10	-	-	
Highest CH	5.48	5.94	-	-	

Mode	LTE Band 25 / 20MHz				
Mod.	QPSK		16QAM		Limit: 13dB
RB Size	1RB	Full RB	1RB	Full RB	Result
Lowest CH	4.93	4.46	5.42	5.01	PASS
Middle CH	4.23	4.81	5.01	5.62	
Highest CH	4.20	4.96	4.49	5.59	
Mod.	64QAM		-		Limit: 13dB
RB Size	1RB	Full RB	-	-	Result
Lowest CH	4.93	4.99	-	-	PASS
Middle CH	4.99	5.51	-	-	
Highest CH	4.49	5.65	-	-	

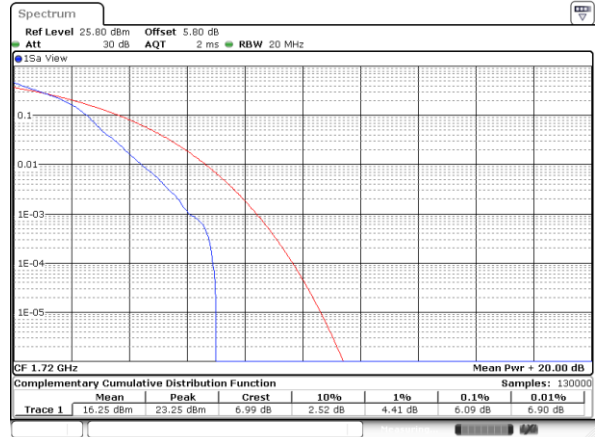


LTE Band 4 / 20MHz / QPSK

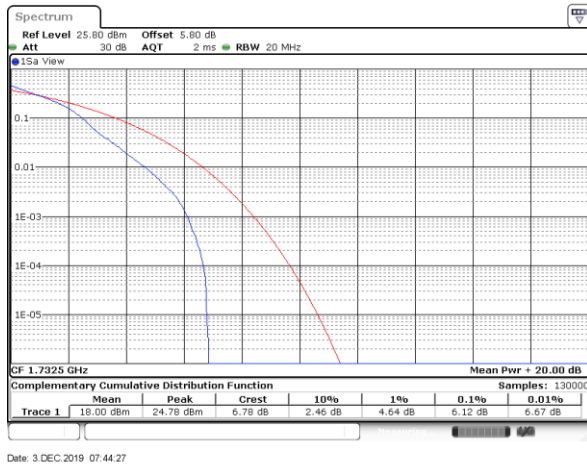
Lowest Channel / 1RB



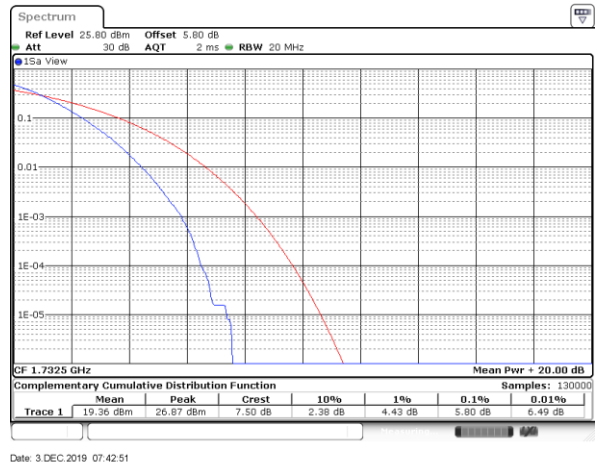
Lowest Channel / Full RB



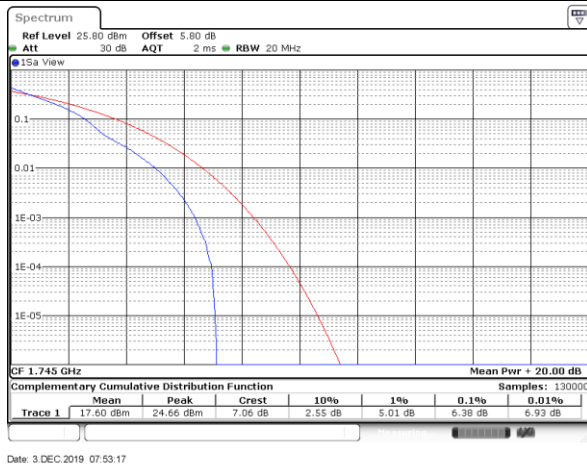
Middle Channel / 1RB



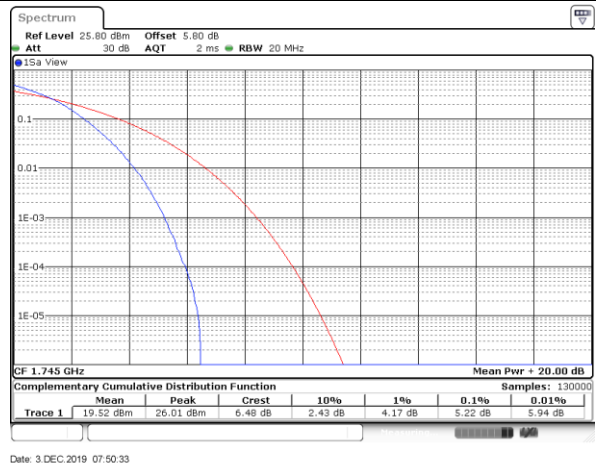
Middle Channel / Full RB



Highest Channel / 1RB



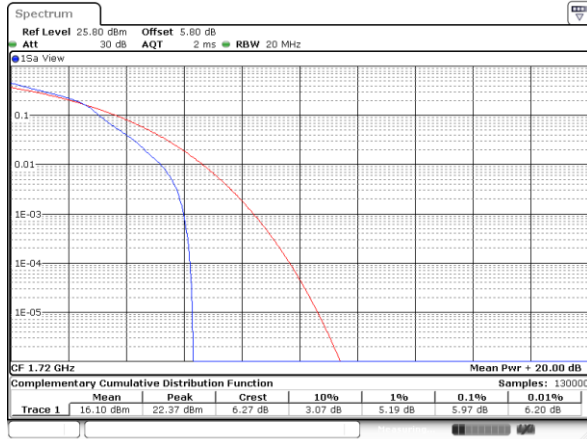
Highest Channel / Full RB



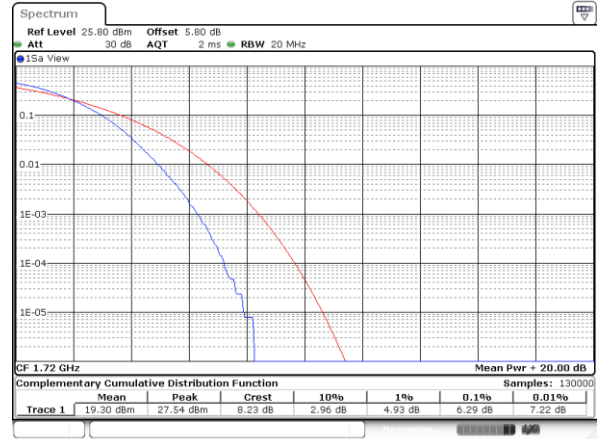


LTE Band 4 / 20MHz / 16QAM

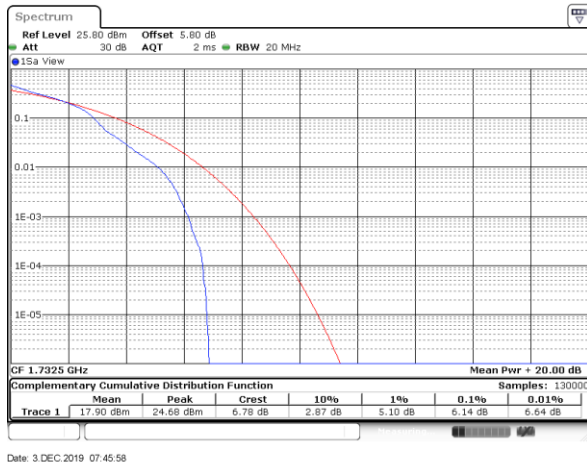
Lowest Channel / 1RB



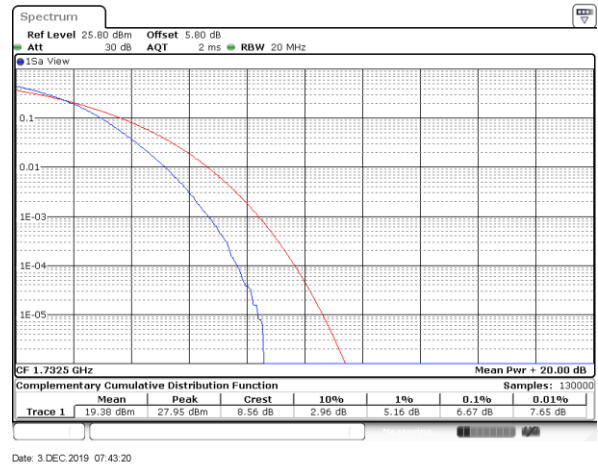
Lowest Channel / Full RB



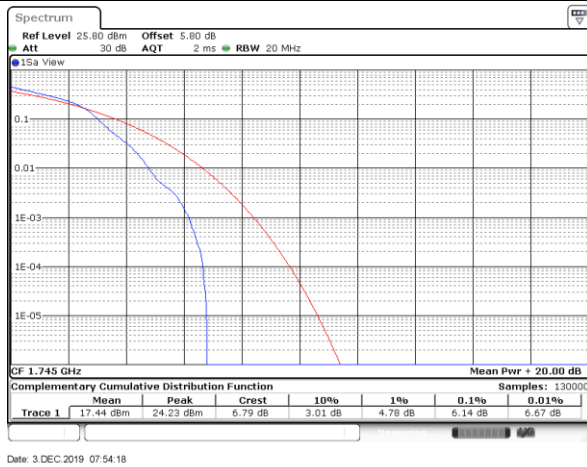
Middle Channel / 1RB



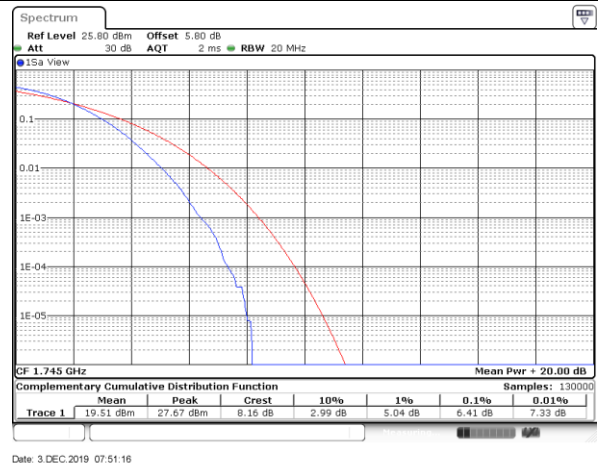
Middle Channel / Full RB



Highest Channel / 1RB



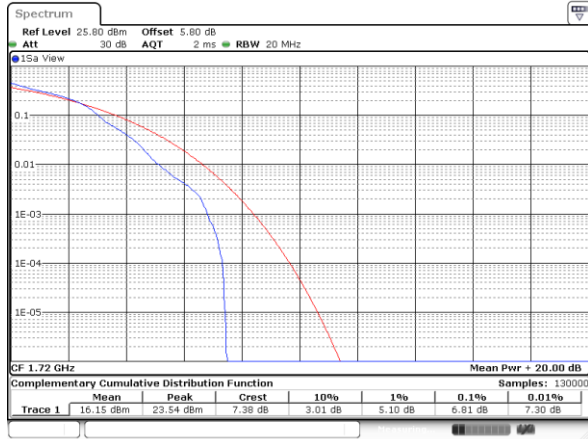
Highest Channel / Full RB



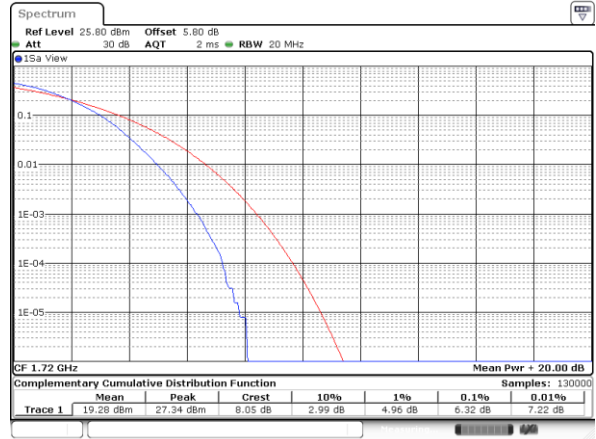


LTE Band 4 / 20MHz / 64QAM

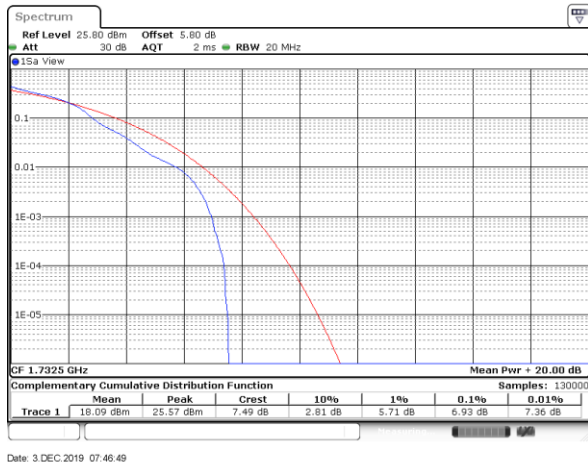
Lowest Channel / 1RB



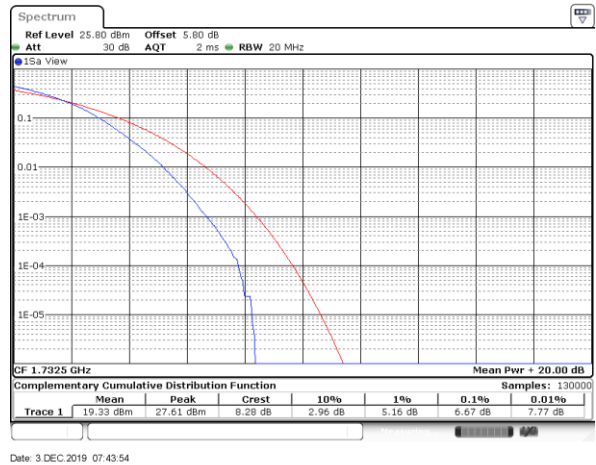
Lowest Channel / Full RB



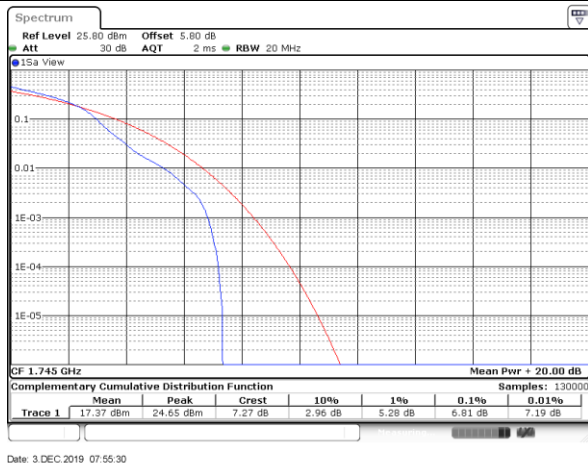
Middle Channel / 1RB



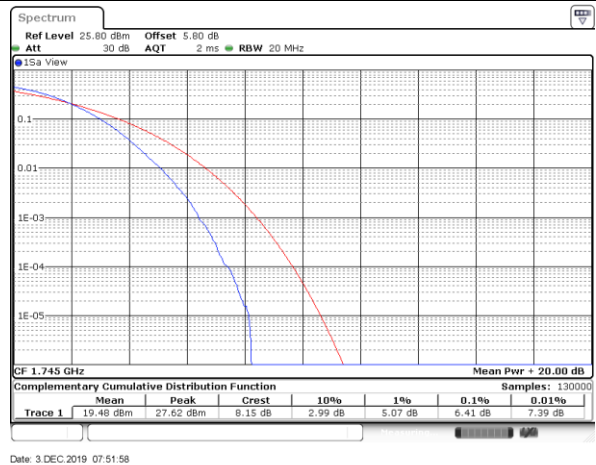
Middle Channel / Full RB



Highest Channel / 1RB



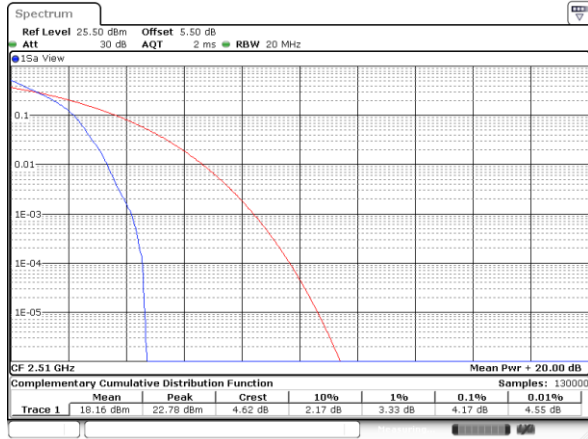
Highest Channel / Full RB



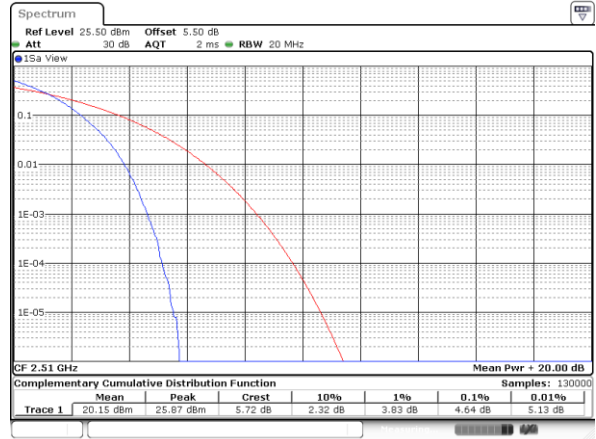


LTE Band 7 / 20MHz / QPSK

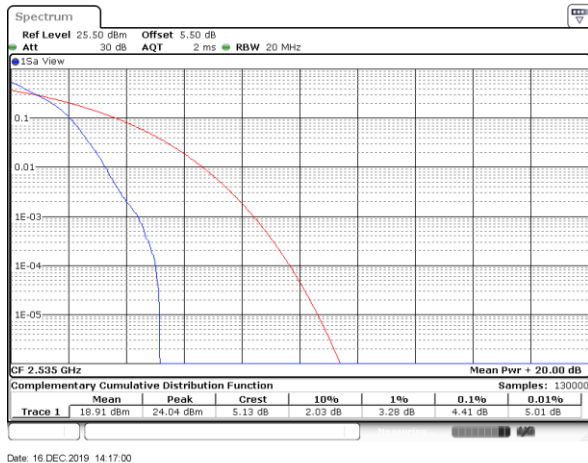
Lowest Channel / 1RB



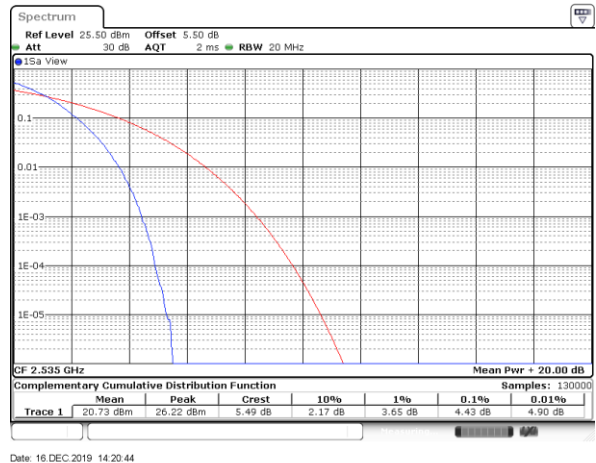
Lowest Channel / Full RB



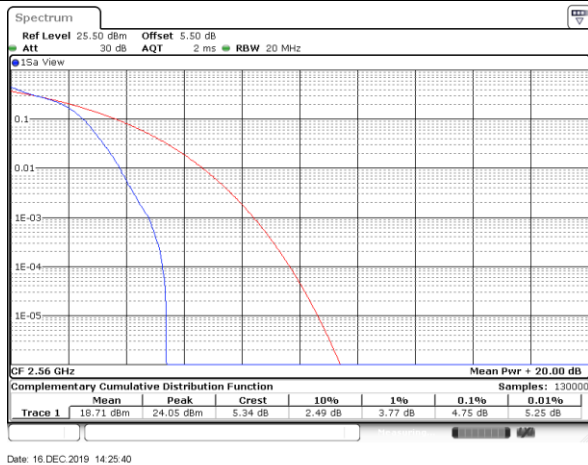
Middle Channel / 1RB



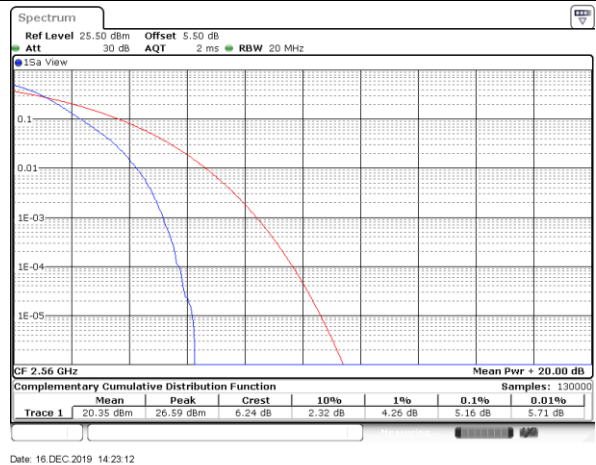
Middle Channel / Full RB

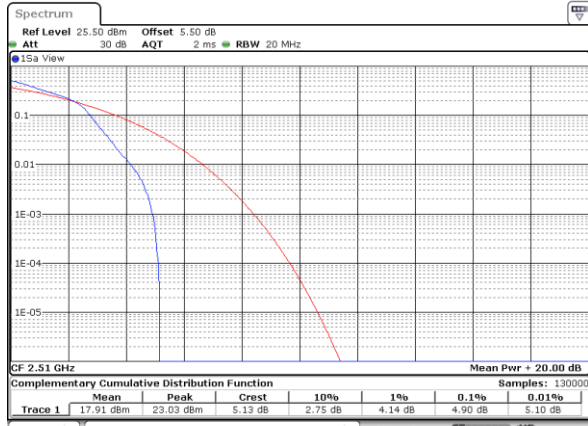


Highest Channel / 1RB

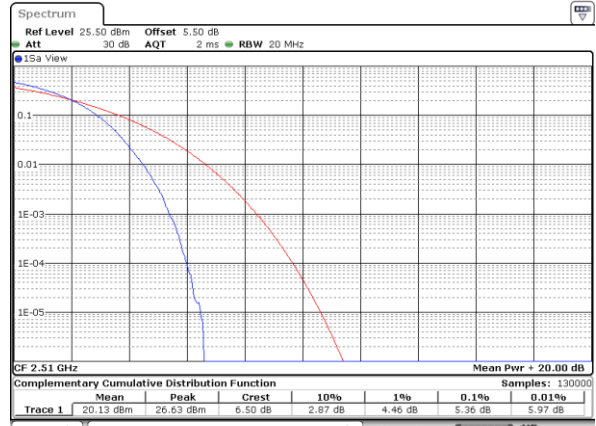


Highest Channel / Full RB

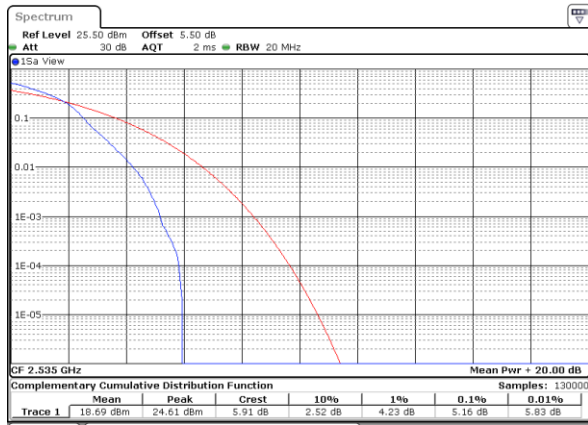


LTE Band 7 / 20MHz / 16QAM
Lowest Channel / 1RB


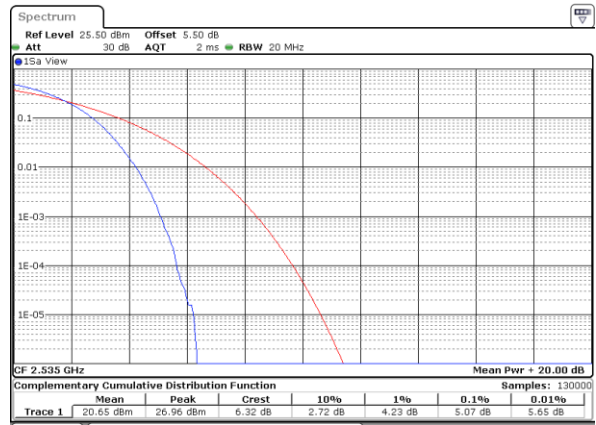
Date: 16 DEC 2019 14:13:40

Lowest Channel / Full RB


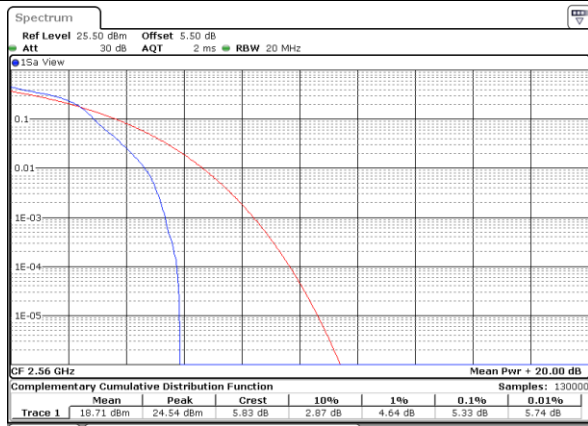
Date: 16 DEC 2019 14:11:02

Middle Channel / 1RB


Date: 16 DEC 2019 14:18:12

Middle Channel / Full RB


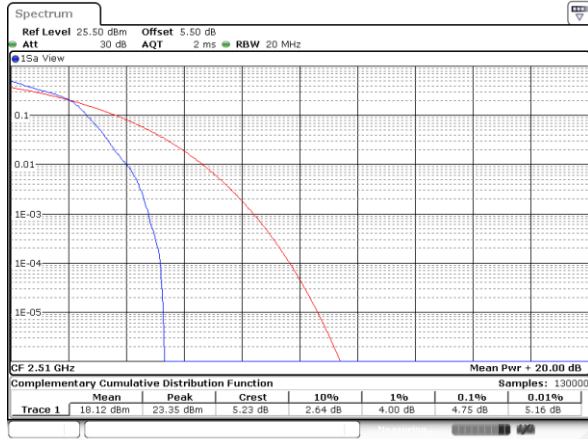
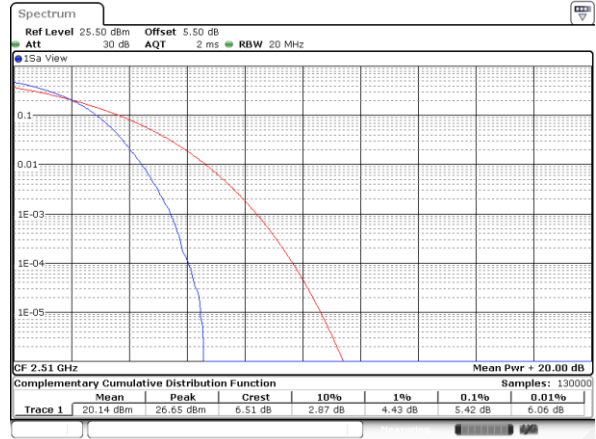
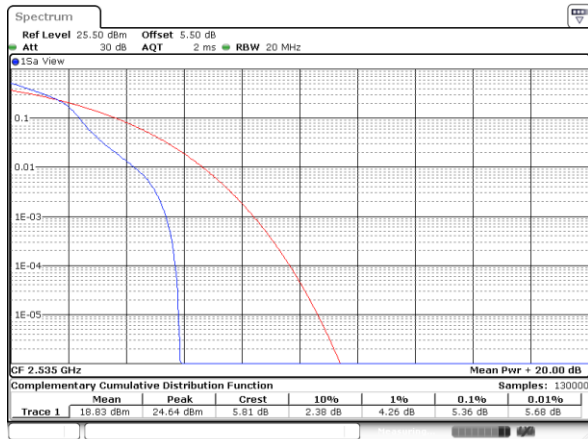
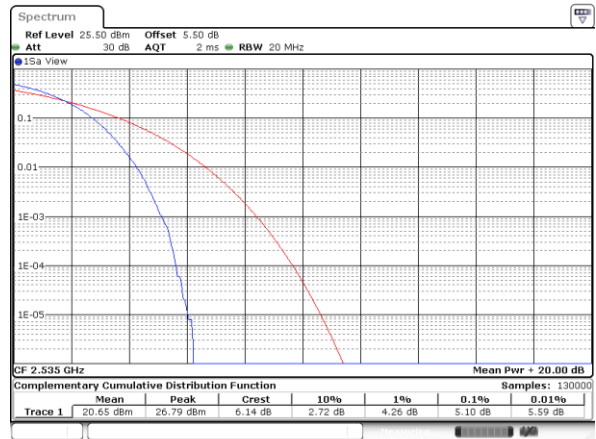
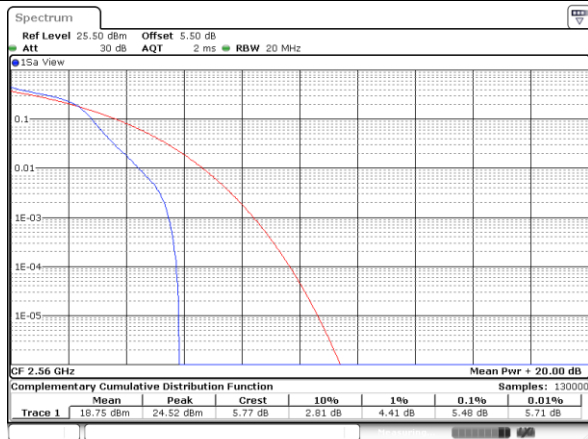
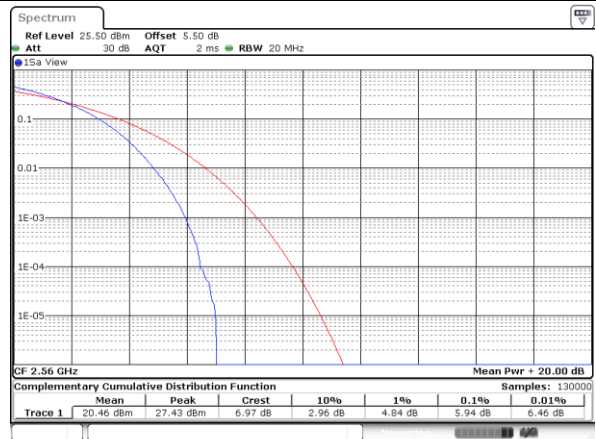
Date: 16 DEC 2019 14:21:26

Highest Channel / 1RB


Date: 16 DEC 2019 14:26:46

Highest Channel / Full RB

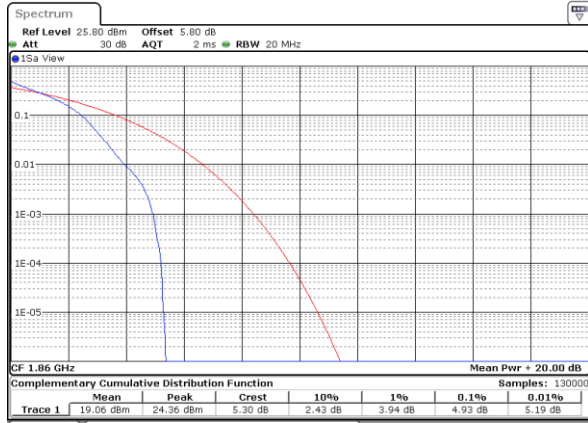

Date: 16 DEC 2019 14:30:59

LTE Band 7 / 20MHz / 64QAM
Lowest Channel / 1RB

Lowest Channel / Full RB

Middle Channel / 1RB

Middle Channel / Full RB

Highest Channel / 1RB

Highest Channel / Full RB


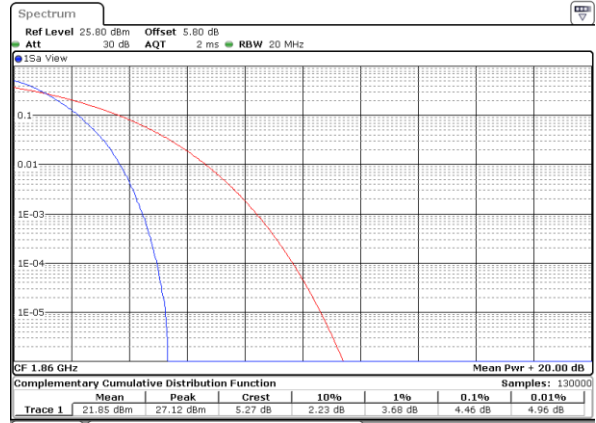


LTE Band 25 / 20MHz / QPSK

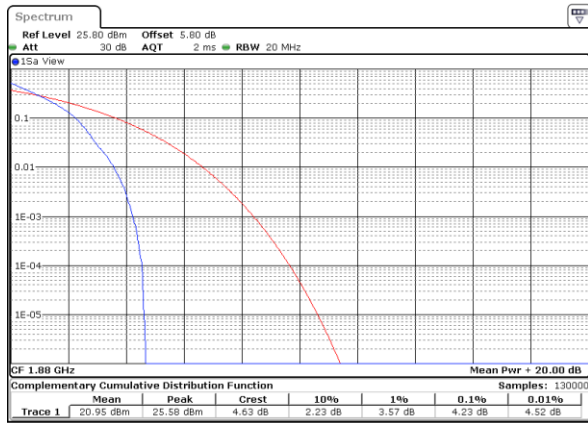
Lowest Channel / 1RB



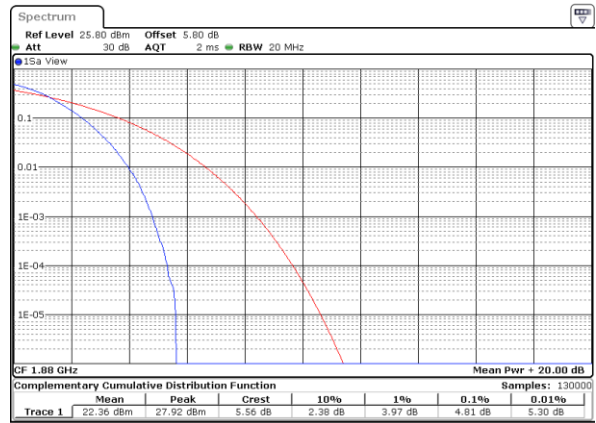
Lowest Channel / Full RB



Middle Channel / 1RB



Middle Channel / Full RB



Highest Channel / 1RB



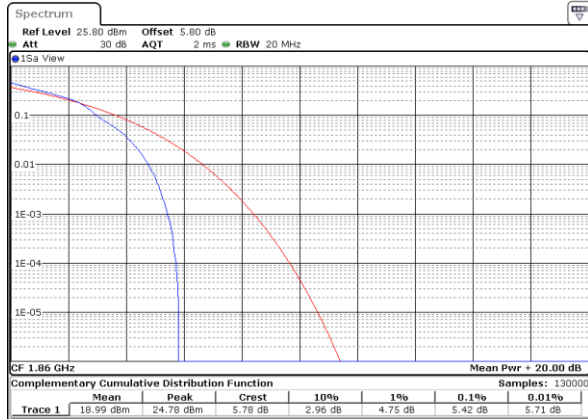
Highest Channel / Full RB





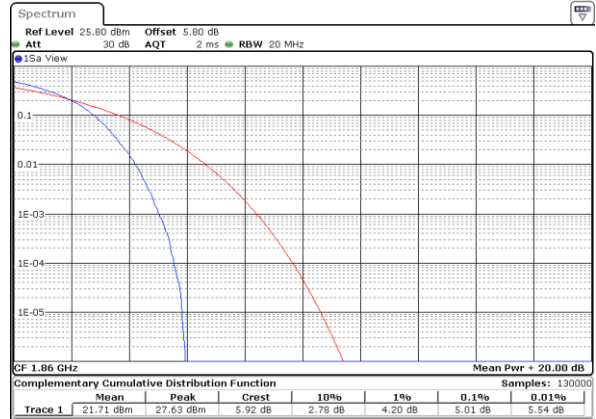
LTE Band 25 / 20MHz / 16QAM

Lowest Channel / 1RB



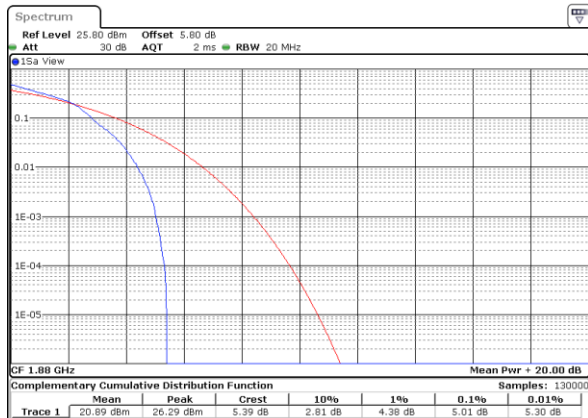
Date: 4 DEC 2019 17:46:28

Lowest Channel / Full RB



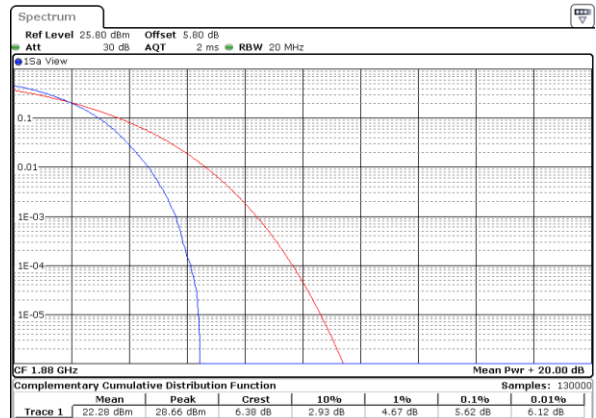
Date: 4 DEC 2019 17:44:31

Middle Channel / 1RB



Date: 4 DEC 2019 17:51:12

Middle Channel / Full RB



Date: 4 DEC 2019 17:49:24

Highest Channel / 1RB



Date: 4 DEC 2019 17:55:40

Highest Channel / Full RB

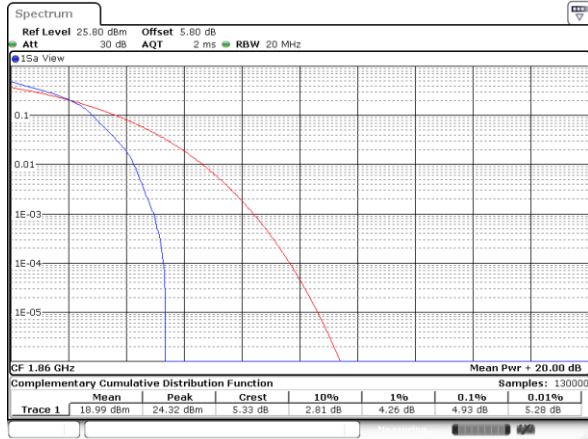


Date: 4 DEC 2019 17:53:52

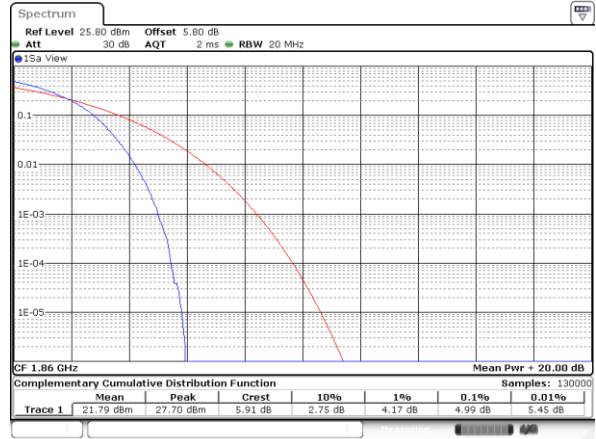


LTE Band 25 / 20MHz / 64QAM

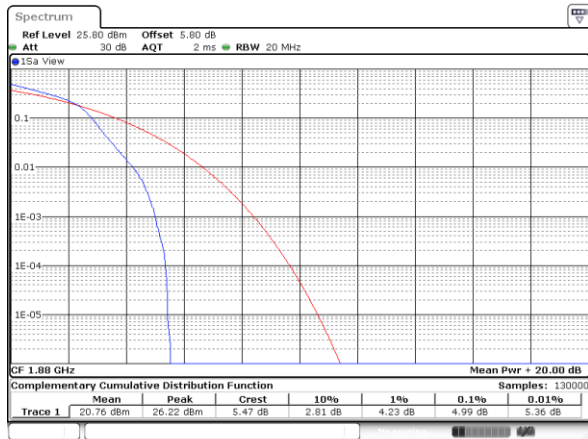
Lowest Channel / 1RB



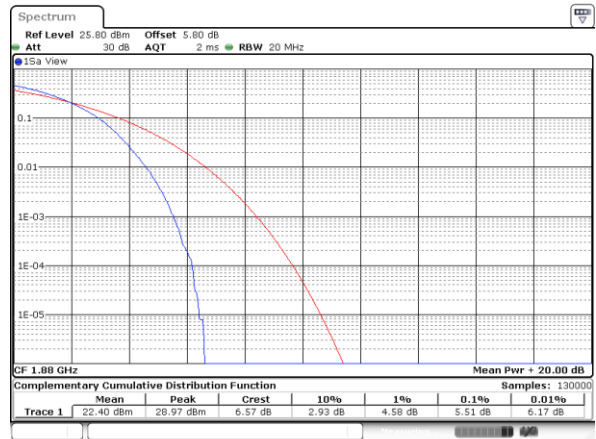
Lowest Channel / Full RB



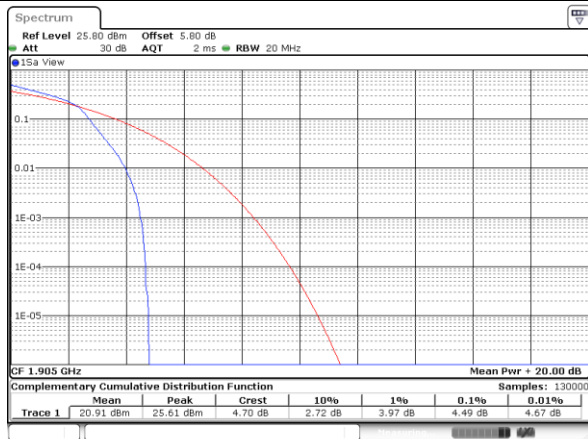
Middle Channel / 1RB



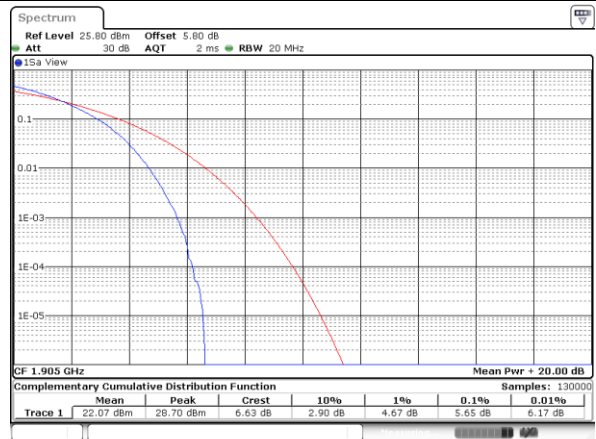
Middle Channel / Full RB



Highest Channel / 1RB



Highest Channel / Full RB





A.1.4 26dB Bandwidth

Mode	LTE Band 4 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.44	1.40	3.29	3.32	5.08	5.15	9.95	9.87	14.12	14.21	20.02	20.14
Middle CH	1.28	1.26	3.05	3.08	4.87	4.83	9.87	9.95	14.48	14.30	20.26	20.14
Highest CH	1.48	1.45	3.54	3.50	5.28	5.09	9.85	9.93	14.33	14.42	20.06	20.06
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-
Lowest CH	1.38	-	3.33	-	5.29	-	9.71	-	14.24	-	20.14	-
Middle CH	1.29	-	3.05	-	4.90	-	9.79	-	14.45	-	20.18	-
Highest CH	1.47	-	3.25	-	5.21	-	10.15	-	14.45	-	20.10	-

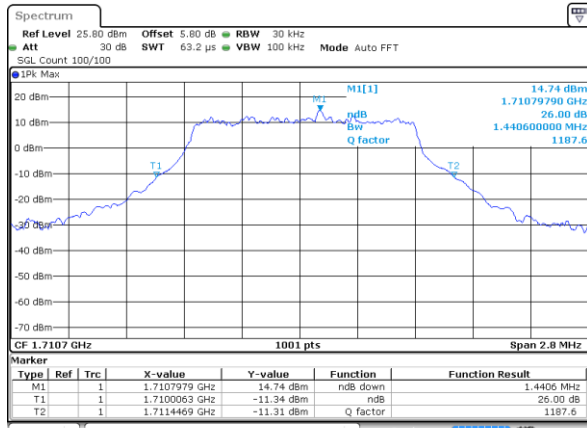
Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	5.315	5.305	9.85	9.89	14.296	14.296	20.14	20.22
Middle CH	-	-	-	-	5.335	5.195	10.11	9.95	14.356	14.356	20.26	20.30
Highest CH	-	-	-	-	5.115	5.295	9.79	10.09	14.386	14.446	20.18	20.18
Mode	LTE Band 7 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-
Lowest CH	-	-	-	-	4.965	-	9.87	-	14.625	-	20.22	-
Middle CH	-	-	-	-	5.215	-	9.73	-	14.535	-	20.34	-
Highest CH	-	-	-	-	5.185	-	10.07	-	14.625	-	20.22	-

Mode	LTE Band 25 : 26dB BW(MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	1.47	1.49	3.31	3.26	5.31	5.26	9.79	9.85	14.30	14.42	18.98	18.90
Middle CH	1.26	1.24	2.98	3.00	4.99	4.95	9.93	10.31	14.18	14.39	19.38	19.02
Highest CH	1.51	1.35	3.36	3.27	5.14	5.37	9.93	9.81	14.63	14.36	19.18	18.66
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-	64QAM	-
Lowest CH	1.48	-	3.28	-	5.31	-	9.83	-	14.45	-	19.10	-
Middle CH	1.27	-	3.00	-	4.96	-	10.03	-	14.42	-	19.02	-
Highest CH	1.47	-	3.25	-	5.13	-	9.85	-	14.30	-	18.98	-



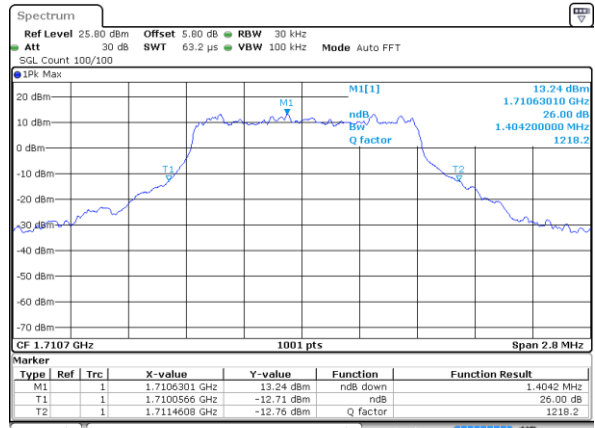
LTE Band 4

Lowest Channel / 1.4MHz / QPSK



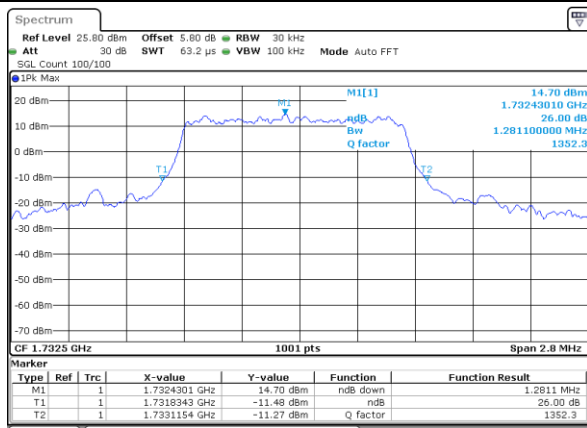
Date: 3 DEC 2019 06:00:42

Lowest Channel / 1.4MHz / 16QAM



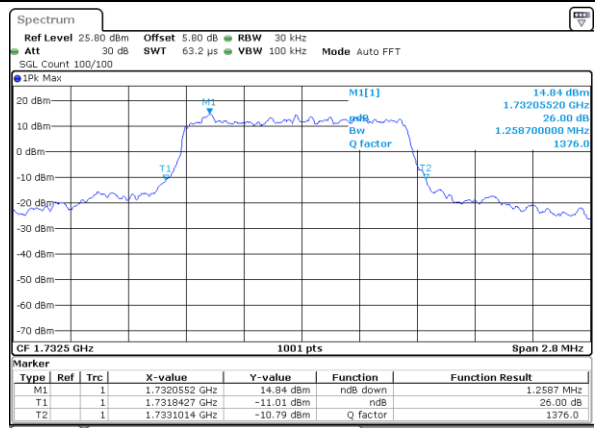
Date: 3 DEC 2019 06:01:54

Middle Channel / 1.4MHz / QPSK



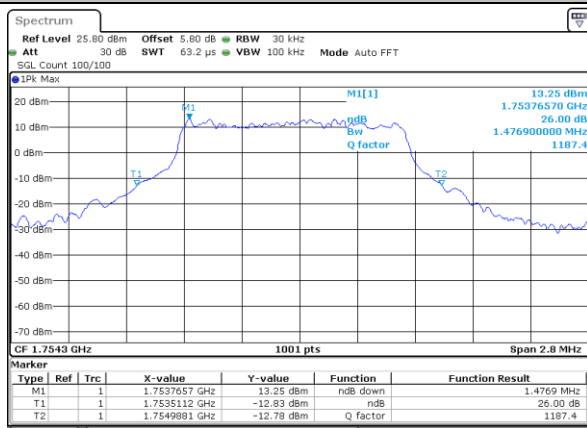
Date: 3 DEC 2019 06:05:51

Middle Channel / 1.4MHz / 16QAM



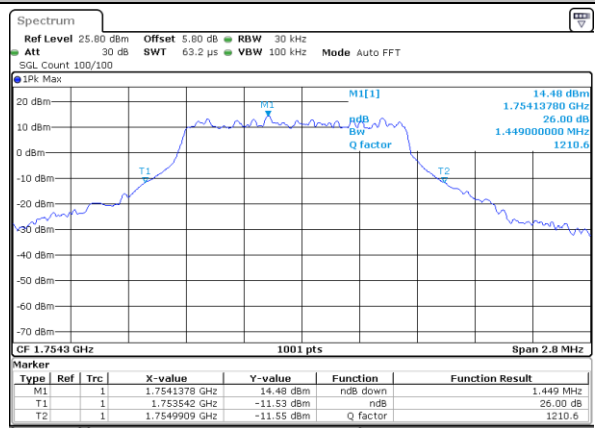
Date: 3 DEC 2019 06:06:14

Highest Channel / 1.4MHz / QPSK



Date: 3 DEC 2019 06:10:12

Highest Channel / 1.4MHz / 16QAM

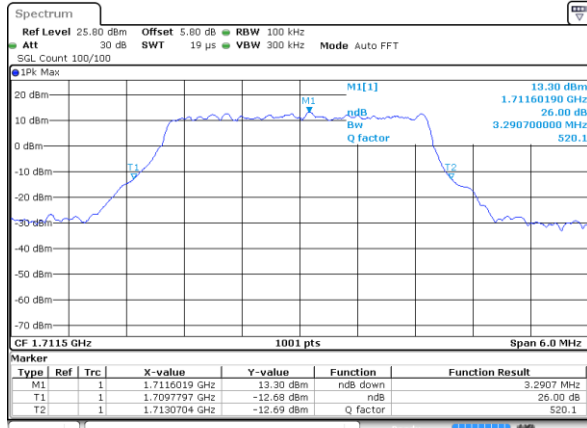


Date: 3 DEC 2019 06:10:35



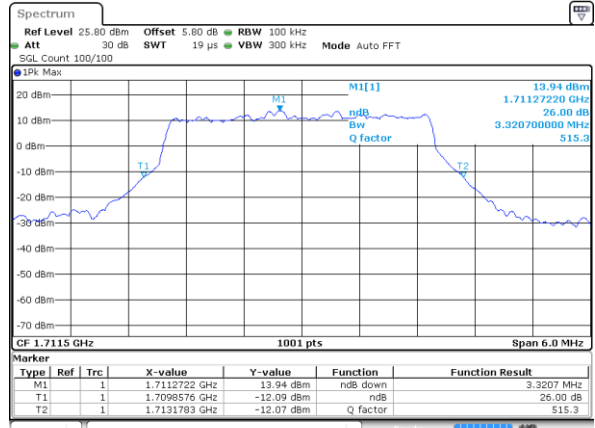
LTE Band 4

Lowest Channel / 3MHz / QPSK



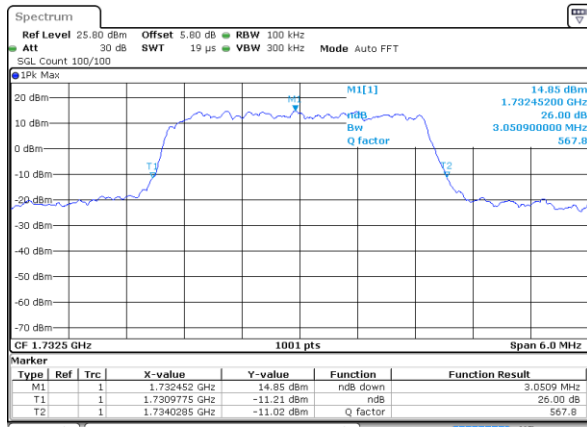
Date: 3 DEC 2019 06:15:03

Lowest Channel / 3MHz / 16QAM



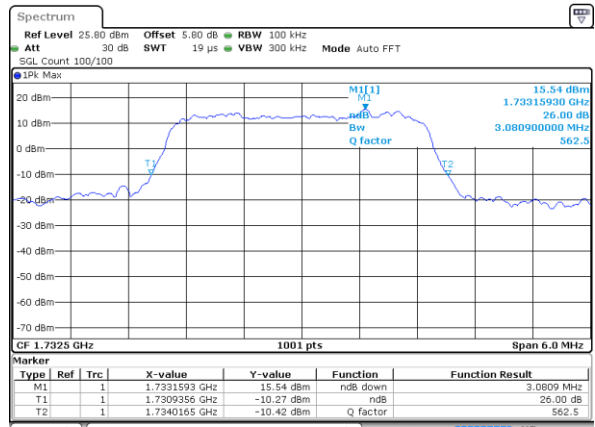
Date: 3 DEC 2019 06:15:26

Middle Channel / 3MHz / QPSK



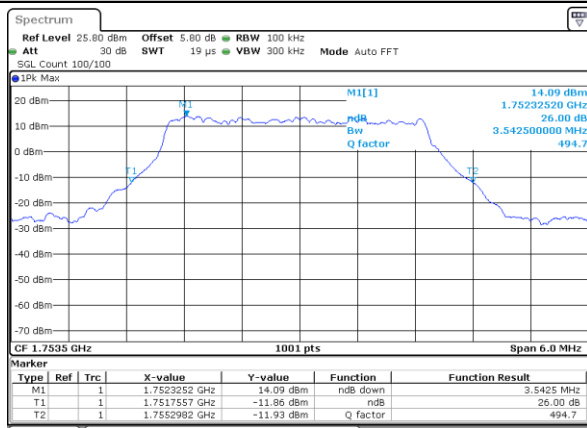
Date: 3 DEC 2019 06:19:35

Middle Channel / 3MHz / 16QAM



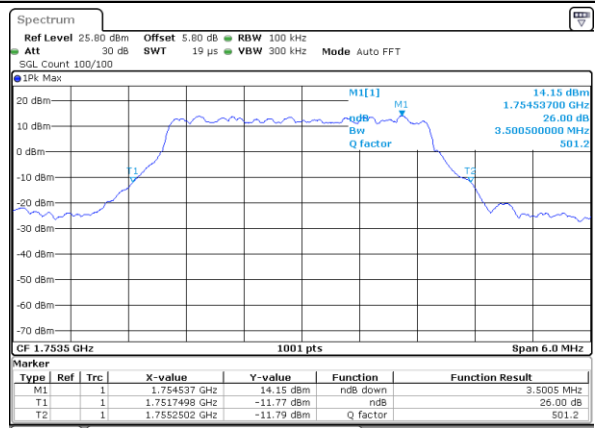
Date: 3 DEC 2019 06:20:02

Highest Channel / 3MHz / QPSK



Date: 3 DEC 2019 06:23:31

Highest Channel / 3MHz / 16QAM

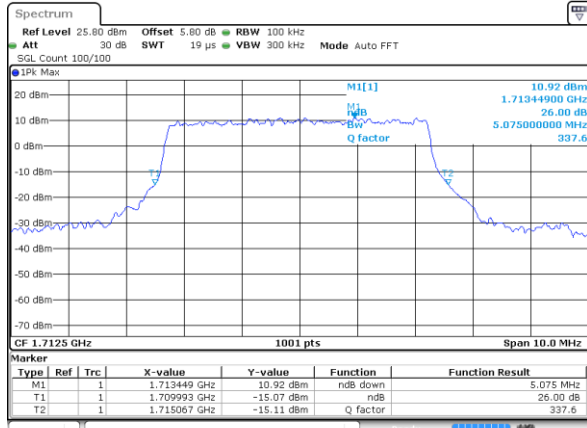


Date: 3 DEC 2019 06:24:07

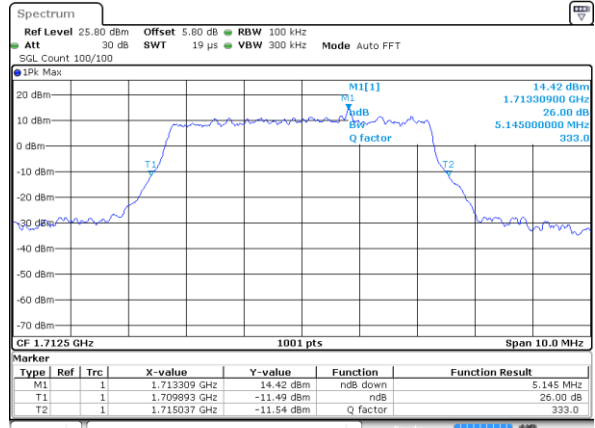


LTE Band 4

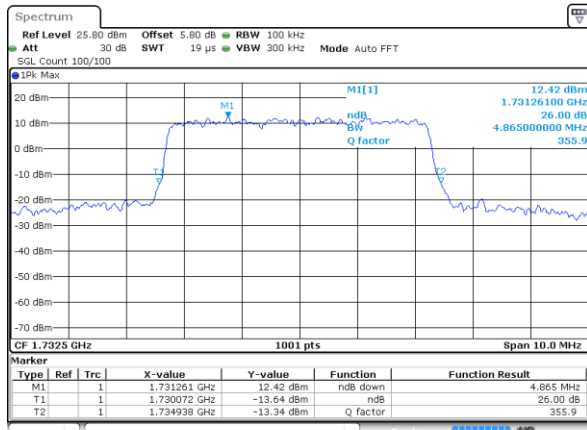
Lowest Channel / 5MHz / QPSK



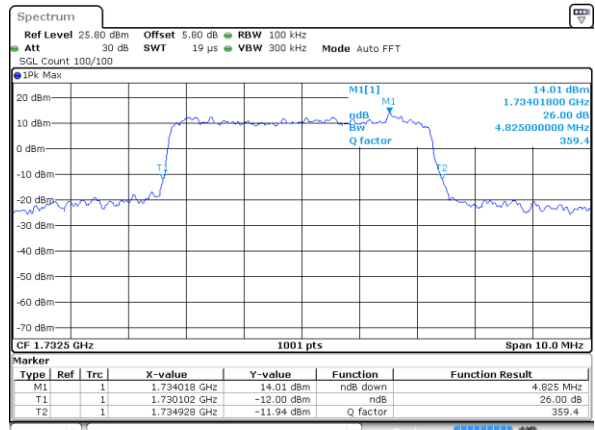
Lowest Channel / 5MHz / 16QAM



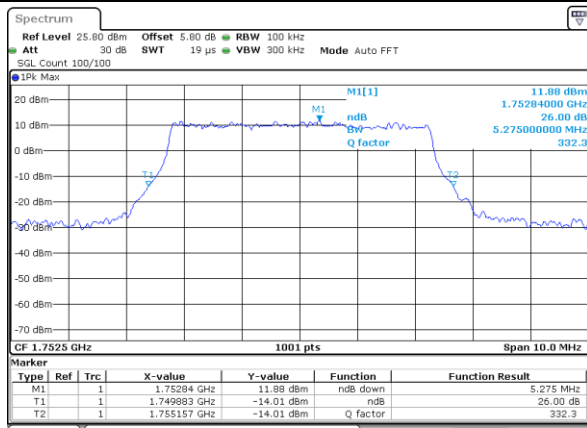
Middle Channel / 5MHz / QPSK



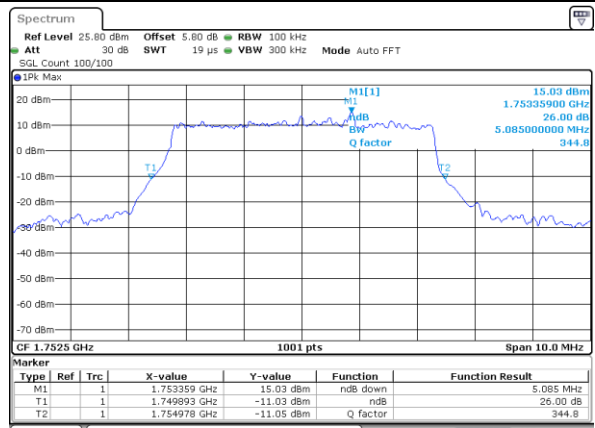
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



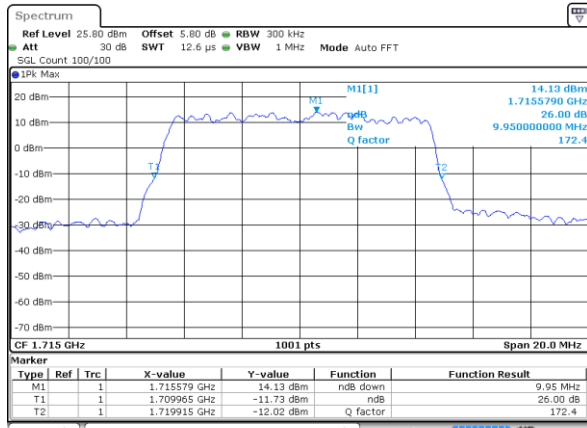
Highest Channel / 5MHz / 16QAM



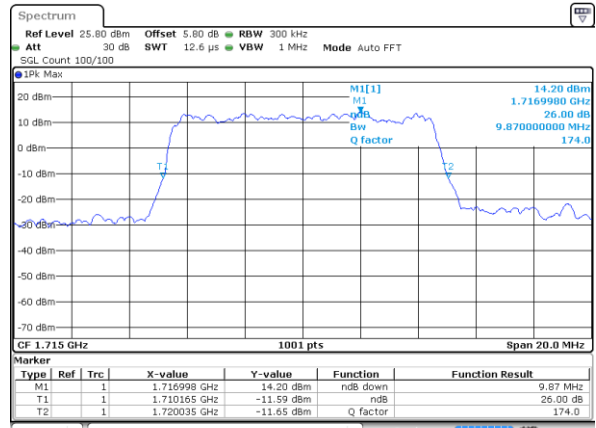


LTE Band 4

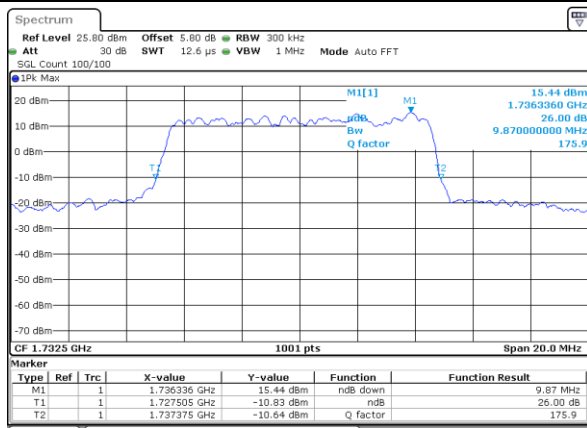
Lowest Channel / 10MHz / QPSK



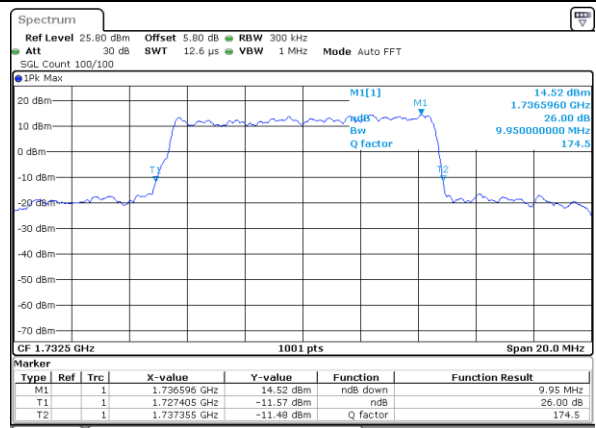
Lowest Channel / 10MHz / 16QAM



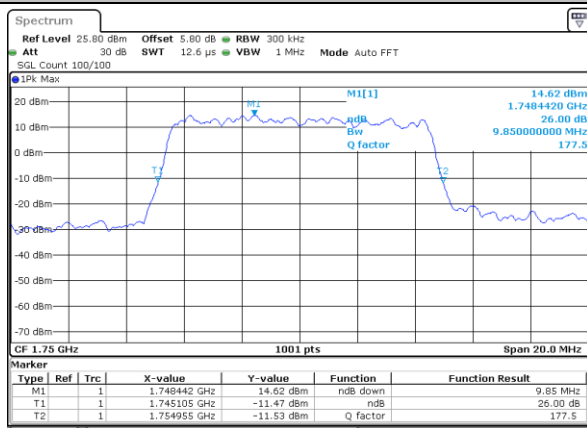
Middle Channel / 10MHz / QPSK



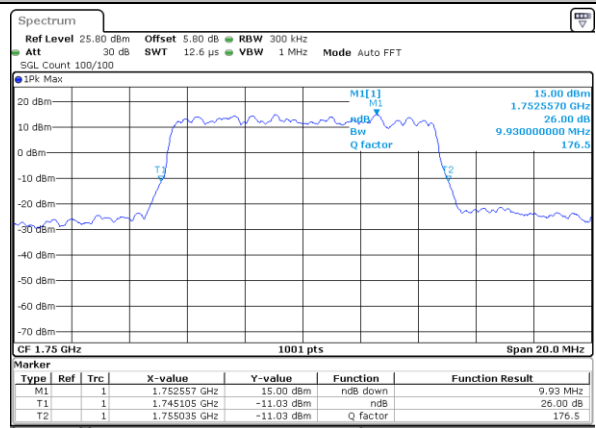
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



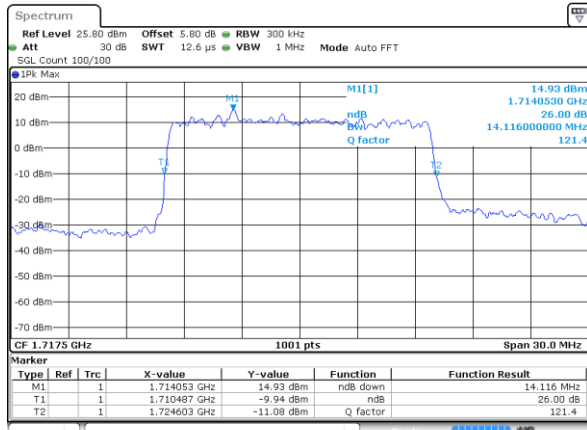
Highest Channel / 10MHz / 16QAM



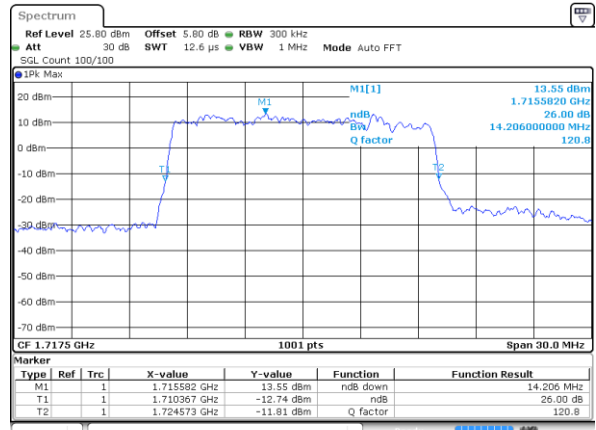


LTE Band 4

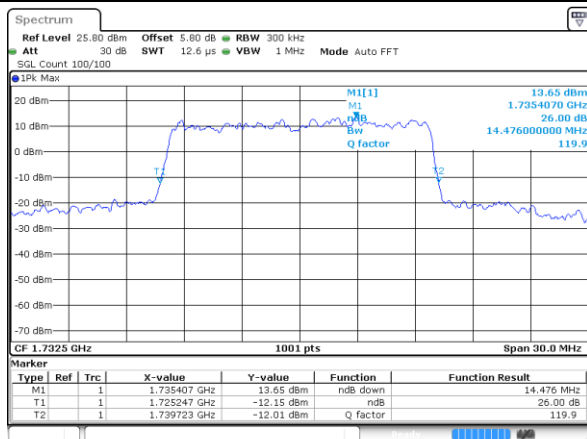
Lowest Channel / 15MHz / QPSK



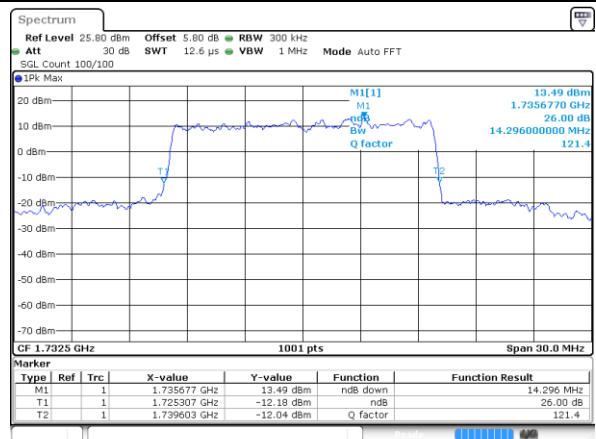
Lowest Channel / 15MHz / 16QAM



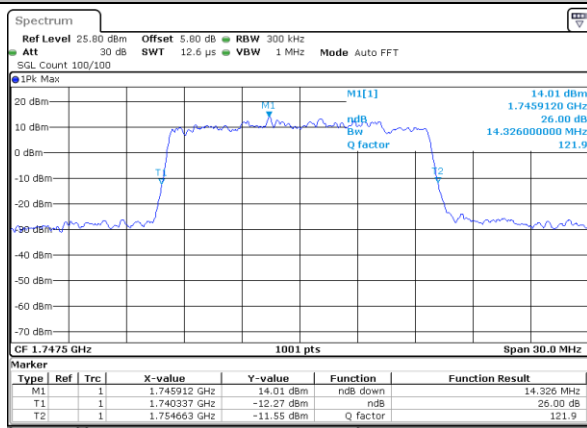
Middle Channel / 15MHz / QPSK



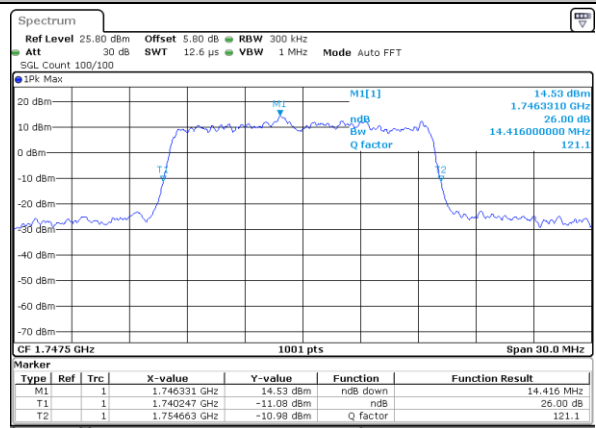
Middle Channel / 15MHz / 16QAM



Highest Channel / 15MHz / QPSK



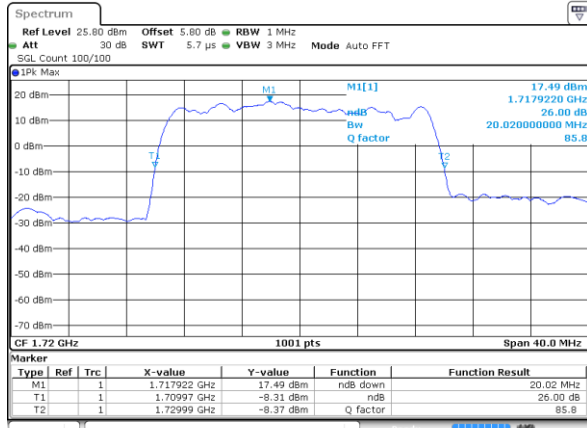
Highest Channel / 15MHz / 16QAM





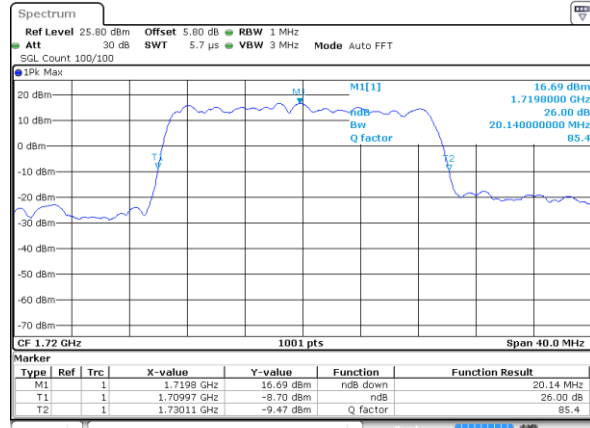
LTE Band 4

Lowest Channel / 20MHz / QPSK



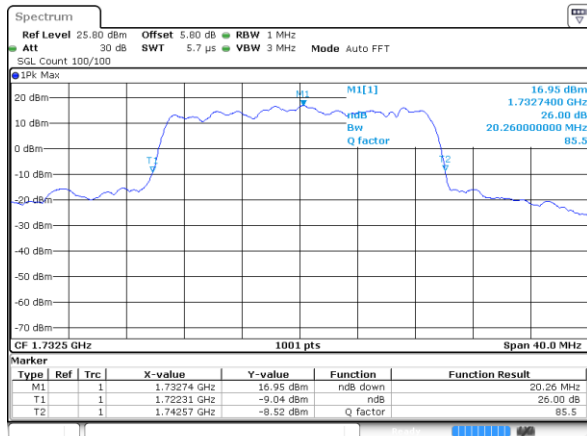
Date: 3 DEC 2019 07:32:25

Lowest Channel / 20MHz / 16QAM



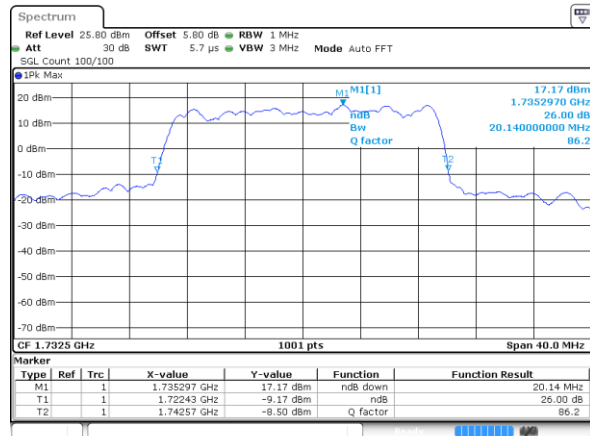
Date: 3 DEC 2019 07:33:07

Middle Channel / 20MHz / QPSK



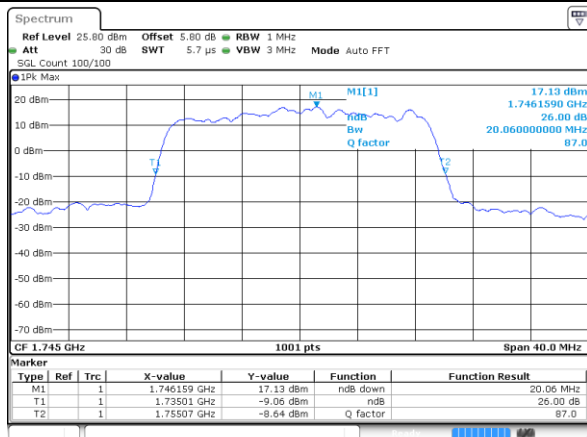
Date: 3 DEC 2019 07:43:03

Middle Channel / 20MHz / 16QAM



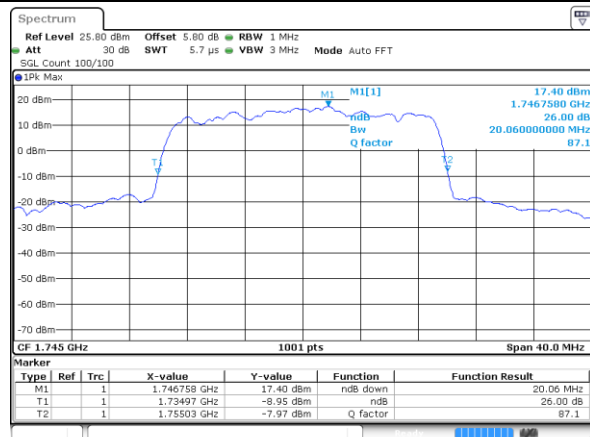
Date: 3 DEC 2019 07:43:34

Highest Channel / 20MHz / QPSK



Date: 3 DEC 2019 07:50:46

Highest Channel / 20MHz / 16QAM

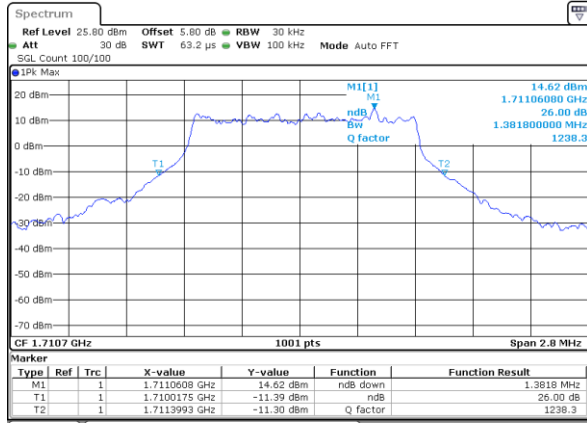


Date: 3 DEC 2019 07:51:31



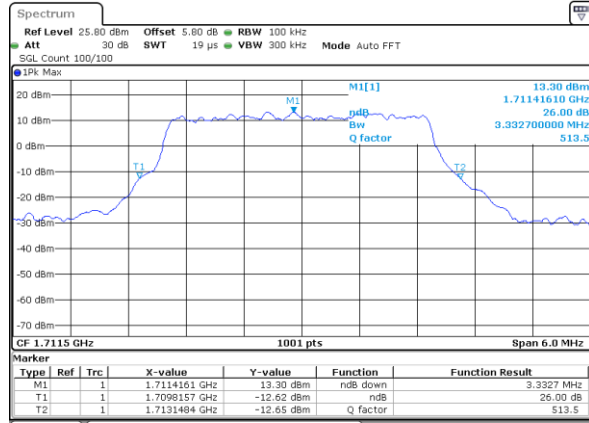
LTE Band 4

Lowest Channel / 1.4MHz / 64QAM



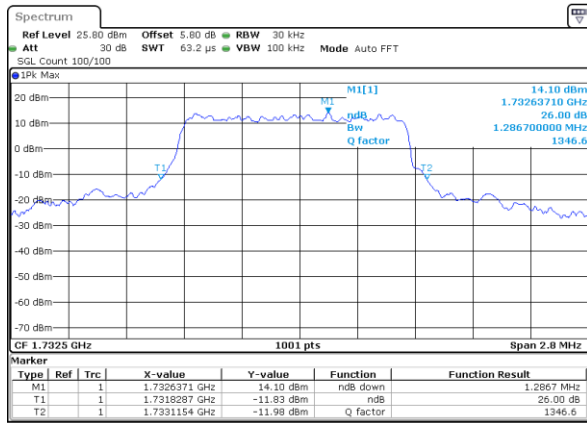
Date: 3 DEC 2019 06:02:20

Lowest Channel / 3MHz / 64QAM



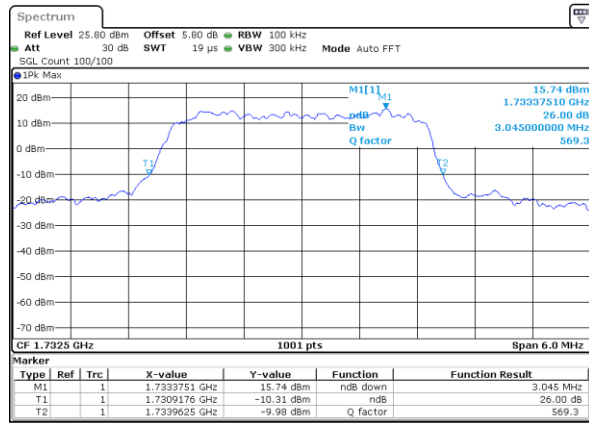
Date: 3 DEC 2019 06:15:50

Middle Channel / 1.4MHz / 64QAM



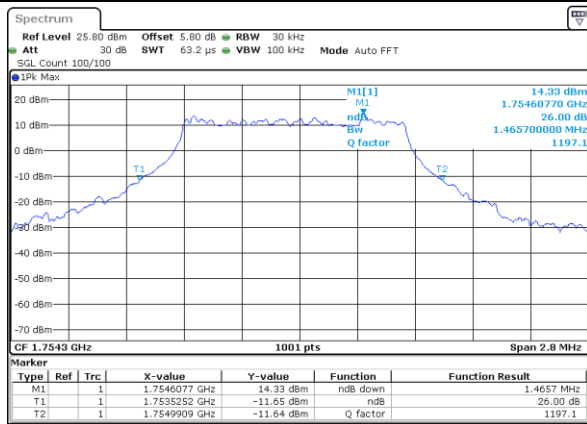
Date: 3 DEC 2019 06:06:38

Middle Channel / 3MHz / 64QAM



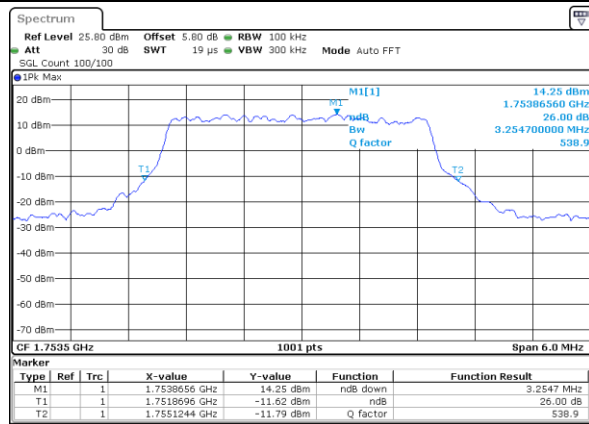
Date: 3 DEC 2019 06:20:27

Highest Channel / 1.4MHz / 64QAM



Date: 3 DEC 2019 06:11:01

Highest Channel / 3MHz / 64QAM

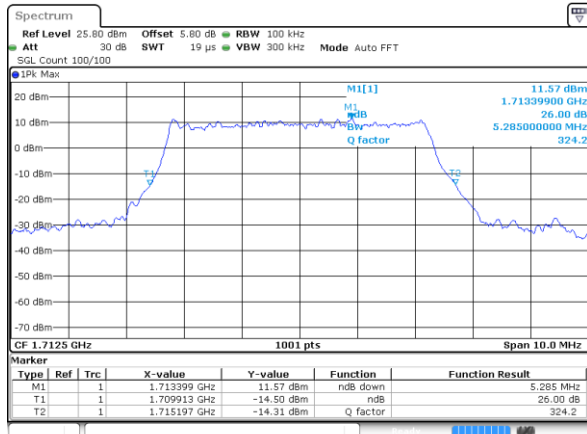


Date: 3 DEC 2019 06:24:34



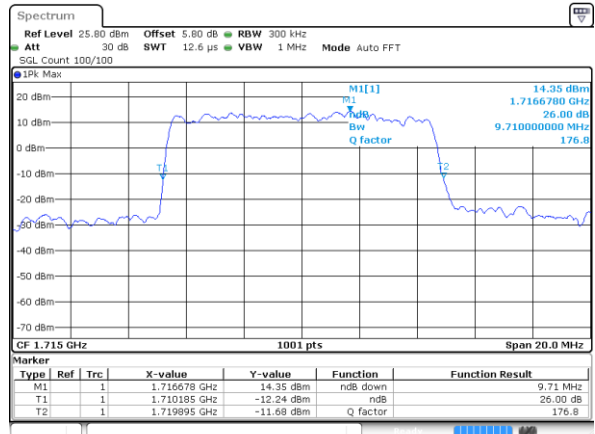
LTE Band 4

Lowest Channel / 5MHz / 64QAM



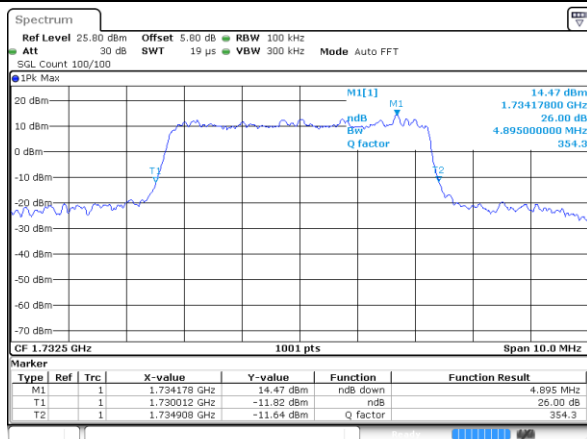
Date: 3 DEC 2019 06:29:52

Lowest Channel / 10MHz / 64QAM



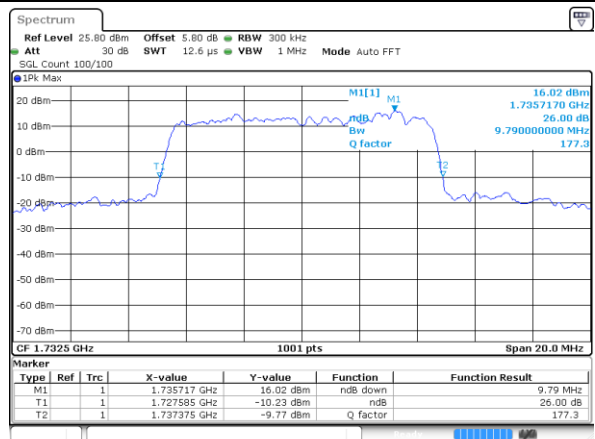
Date: 3 DEC 2019 06:47:28

Middle Channel / 5MHz / 64QAM



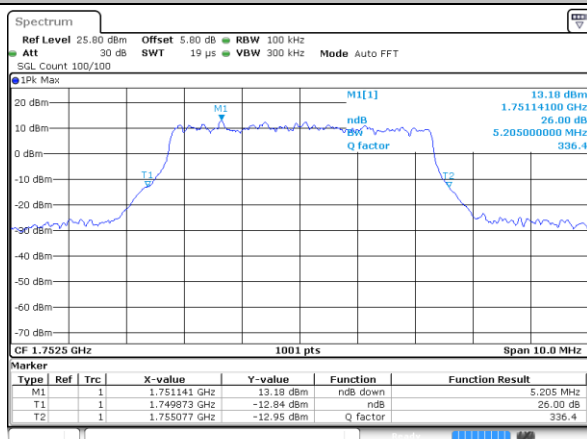
Date: 3 DEC 2019 06:36:45

Middle Channel / 10MHz / 64QAM



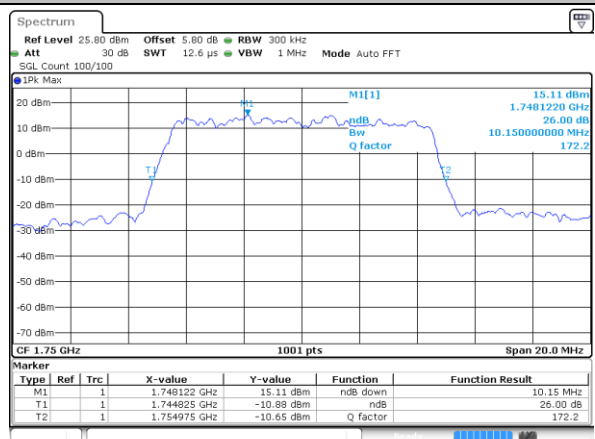
Date: 3 DEC 2019 06:51:55

Highest Channel / 5MHz / 64QAM



Date: 3 DEC 2019 06:41:05

Highest Channel / 10MHz / 64QAM



Date: 3 DEC 2019 06:56:24